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SEPARATE FACTORY FOR OFFICE FURNITURE

THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR.

WITH WHICH IS INCORPORATED THE "BRITISH ARCHITECT."

VOL. CXXI.—No. 4105. OCTOBER 7, 1921.

THE FUTURE OF THE COUNTRY SEAT.

TO state that the industrial and social changes of a country must reflect themselves in the national architecture is but to reiterate a familiar platitude. However, the effect of certain of these changes upon ancient—or, shall we say, existing—buildings is an aspect of the matter that has perhaps not received the amount of consideration or speculation that might have been expected; indeed, until the appearance of the recommendations issued by the Ancient Monuments Advisory Committee but little thought has been given to the subject.

In the hierarchy of the arts, architecture holds a unique position. "Man can do without pictures, sculpture, music," we are told, "but buildings he must have." That is but one of the many distinguishing qualities of architecture; another, and one which is more germane to our subject, is the difficulty and expense incurred in the preservation of an architectural work in comparison with a product of one of the other arts; music and poetry present no difficulty, painting and sculpture but little. More typical than all else of the ages that produced them are the great houses—castle, hall, court, place, manor—the name varying with the age, but having always the same implication—of the aristocracy and the affluent. Yet we are faced to-day, owing to the changed and changing conditions, both social and economic, with the prospect of these great monuments, each redolent with historic association and artistic merit, becoming derelict, or suffering worse indignities at the hands of iconoclastic ignorance or avarice. Meanwhile we fill our public institutions with lesser relics of the age; our museums with furniture, ceramics, textiles, clothes; our galleries with pictures and statues; and our libraries with prose, verse and music.

It has been urged that the State should make itself responsible for these buildings, but it must be quite evident that, although in many instances this may be possible—perhaps on the lines indicated by the Ancient Monuments Advisory Committee—the financial resources of the Exchequer, particularly at the present time, will not permit of a very extensive guardianship, and some other means for the preservation of these buildings must be sought. The difficulty that is often to be found just now in reconciling the demands for beauty with the laws of economics is also, perhaps, an unfortunate symptom of the age; such reconcilement for the most part ending in a compromise, and perhaps it is in such a course that the hoped-for solution of the present problem is to be found. To everyone the spectacle of a great building turned from the purpose for which it was intended and made to serve some lesser function must be one of sadness; yet in some cases we have come to observe it almost with equanimity: the Cappucine monastery at Amalfi as an hotel, the Basilica Ulpia at Rome as a restaurant, and Stafford House, London, as a museum, are transformations which only in certain moods arouse melancholy reflections. It is along these lines, then, that we seem to be driven for the salvation of these monuments.

Some very definite safeguards to prevent mutilation are essential, and in formulating these the suggestions of the Ancient Monuments Advisory Committee should be of great assistance. Certainly some official sanction to the alterations required for the adaptation of a structure to a new purpose should be obligatory, as also the employment of competent architectural service. Further, the adaptation should be of such a nature as not to interfere with the main fabric and its embellishments. The endeavour should be to effect the metamorphosis by means of removable additions rather than by structural alterations, and special care would be required in the provision of any new plumbing, wiring and suchlike services. The task, we are aware, is no easy one and calls for the exercise of the greatest skill and ingenuity; it is one that should be undertaken only by those possessing knowledge and appreciation of fine building. Neither skill unrestrained by reverence nor scholarly discrimination without constructive ability will achieve the desired result.

What are the purposes to which the erstwhile power of pomp and splendour of these buildings is to be put? Despite scepticism and ridicule the arrangement of dwellings on communal lines is becoming more frequent, and is spreading through every grade of society. "Here is the possibility," says a correspondent, "for the formation of a series of communal dwellings, the opportunity of acquiring a country residence of rare distinction and elegance, with the use of stables, garage, spacious gardens, and parks. The suggestion is by no means so preposterous as it may appear to some conservative minds, and were such a scheme to be organised on bold lines it would confer a benefit in more ways than one. No tremendous amount of alteration would be needed to convert some of them into convalescent homes, and the prospect of a prolonged period of gentle valetudinarianism amidst the seductive surroundings in which many of these great houses are placed is not devoid of attraction." The use to which these buildings might be put must, in some degree, be dependent on the situation, and propinquity to a town or borough suggests the possibility of a dignified home for the growing activities of the municipality. This, coupled with a public museum, library, gallery, and public gardens and parks, is a purpose which may commend itself to the democratic aspirations of the age. The introduction of the country club, an institution so popular in America, might also prove successful, and what better means of inaugurating such a novel addition to social life could be found than by converting one of these ancient houses into a place fit for the forgathering of men of taste and means for purposes of sport and recreation?

We have the evidence of current events to prove that what we are suggesting is by no means so unlikely an occurrence as many may presume. On another page of this issue will be found a reference to a meeting, presided over by the Bishop of Coventry, convened to consider the acquisition of the Old Palace Yard, an architectural relic containing work of the fourteenth century. The main part of the building, however, comprises a spacious seventeenth-century house, and the proposal is that this shall now be used for diocesan purposes, as registry, record office, and the like. This is a more dignified purpose than can be allotted to many ancient buildings, but it is an indication that the necessity for a method of preservation such as we are advocating is already receiving recognition.

What we would emphasise is not so much the necessity for preserving these buildings—that, we trust, is sufficiently realised—but that we cannot altogether look to the State to effect such preservation. The intimacy of architecture with human life is both its greatness and its weakness, and when the building survives its original purpose it is often necessary to assign to it a new and, we fear, less congenial one.

NOTES.

The Outlook in the Building Industry.

APART from the building work now in progress, which is by no means inconsiderable, it is common knowledge, as pointed out by Mr. Ernest Newton, R.A., in a contemporary and by Mr. F. J. Gayer (Past-President of the London Master Builders' Association) in a letter in this issue, that a large amount is being held up owing to the cost, which is the chief obstacle that prevents the industry from going at full speed and being fully employed for many years to come. The prices of materials have come down, and are likely to be still further reduced, but it is the uncertainty caused by this downward tendency which is the chief cause of the reluctance of the public to undertake building enterprises. No one, unless he is compelled, will buy on a falling market. Only when the prospect of the value of a building depreciating before it is built has passed will enterprise be again freely indulged in by the building public.

Museums Abroad.

THE account published in a contemporary of the survey of museums on the Continent, by Mr. S. E. Wimbolt, is interesting reading, and in it he rightly calls attention to the atelier of plaster casts at the Palais de Louvre in Paris, which is such an important feature. There is here, he says, "available a great wealth of beautiful things," which, unfortunately, it must be added, we make very little use of in this country. Every school in this country should contain for educational purposes a small selection of statues, busts, bas-reliefs, &c., in order to familiarise the pupil with what is best in sculpture, and to educate his taste. There is also at the Musée St. Germain an atelier for the production of plaster casts. The Victoria and Albert Museum contains a gratuitous service of lantern slides which are obtainable by the public for approved educational purposes, but its completeness does not apparently compare with that of the Musée Pedagogique, which has not only a service of lantern slides but also cinema films for schools all over France. The writer of the article suggests that a similar teachers' information and supply bureau should be established in London by the Board of Education. We should like, too, to see the efforts of the Teachers' Guild directed to bringing our country more into line with Continental achievement in the way of introducing art into our schools.

International Art Congress.

THE speeches reported at this Congress, which opened in Paris on September 26, contain little matter that is new or which gives expression to the more significant developments which are observable in art during recent periods; and perhaps the time has not yet come when we can form an altogether just estimate of their character. Yet that these changes are likely to give a new impulse to art, and greatly to differentiate its character, diffusing its influence more widely, we think there can be no doubt. These changes present themselves under two very different aspects. On the industrial side we see a conscience growing in regard to the need for a higher average in our manufactures, both in regard to craftsmanship and design. Running parallel with this, and part of the impulse out of which it has grown, we have the newly-formed British Institute of Industrial Art, a Government body having for its aim the encouragement of good craftsmanship and design through the exhibition of examples of more distinctive and individual character. These developments on the side of applied art diffuse themselves perhaps more widely than those which are seen to influence fine art.

A New Direction in Art.

THE resistance which is so manifest at the present time to old ideas, and a temper of revolt, was perhaps inevitable in the process of extricating beauty from the assumptions of academic convention and Victorian sentiment. It cannot be doubted that "respectability," drab enough anywhere, is the drabbest garment in which art can shelter, and in its timidity to custom and convention it had travelled far from life. So we perceive on the side of fine art, also, this significant development towards a freedom for more direct expression, though often immature. And, though it may seem poor to us, divested of this now obsolete inheritance of academic propriety and conventional subject-matter, what it does include is spontaneity and the adventurous spirit of youth.

The J. G. Hardy Memorial.

MESSRS. NIVEN & WIGGLESWORTH, FF.R.I.B.A., Architects.

[This simple war memorial has recently been placed in the Counting House of Messrs. John G. Hardy, Ltd., at 4, New Burlington-street, W. It was designed by Messrs. Niven & Wigglesworth, FF.R.I.B.A., and executed in Hopton-Wood stone by Mr. Laurence Turner.]

The Abbey's New Window.

THE new window for Westminster Abbey as a memorial to the Queen's Westminsters who fell in France very well illustrates another aspect of the present tendencies in applied art, and how the absence of attachment to life and reality obstructs its progress. In this window we see sustaining itself the secure middle course, the use and wont of so-called "ecclesiastical art," into which no innovations enter—or revolt! We know these figures of King Richard and St. George, they are of the familiar repertoire, and contain all the right things—poses, shields, swords, banners, orbs, crosses, haloes, &c., of unexceptionable character. Yet there are some, we feel, who will doubt whether this suspension from all direct vitality and first-hand experience has not reached a stage when we are inclined to yawn, and wish for the evidence of some struggle, some adventure, again; and will ask whether the needs of a once vital art are met by these compilations, which have grown so musty. This detachment from life—from what we really feel and experience, secures, no doubt, the kind of completeness which is denied to a work of art. Our intention here is only to call attention to it in order that it may speak for itself. Whether a treatment so derived can serve the cause of beauty, solace suffering, or promote religion, may be questioned; our hope, however, is to see an art, once eloquent, inspired again with some more vital message; with more struggle and aspiration to relate it again to life.

Ugly Hoardings.

THE complaint made in the Press recently against "the hideous hoarding" erected opposite the home of Keats at Hampstead is no doubt justified, but it hardly needs pointing out that the home of Keats is not the only one subject to the same desecration. Although in a few directions some improvement has been observable in the method of public advertising, it is still the case that the bulk of it is hideous and disfiguring, and there is a little too early a tendency, we think, to crow because the Underground Railways have set a better example. In thinking of arguments which may influence the unconverted advertiser, apart from the public welfare, it would be interesting to compare the cost of the better form of advertising (in one or two flat colours and outline) only with the more realistic and pictorial posters that predominate on the public hoardings. We have reasons to believe that the worst cost the most, and that the great success which has attended the Underground effort might stimulate others to follow their example if it were realised that they could obtain better results at less expense, and arrest more attention.

Madonna with Holy Child, St. John the Baptist, and Saints, at Fiesole Cathedral.

Art and a New Age.

THE correspondence in a contemporary on this subject arising out of the letter of Sir Martin Conway does not seem to us sufficiently to distinguish between the many movements—or pe iodic convulsions—in the art world before the war, and those subsequent to, and growing out of it, which have something within them far more profound and significant. There is a certain innocence in their very immaturity and freedom from so much of the 'group" culture and aggressiveness. But in them there is something far more enduring, because it is the beginning of a return to treating painting as a means of conveying ideas attached to vital human interests, and affecting its welfare. The theoretic and preoccupied detachment from life, which made art into a close preserve, is dropping out of it. Sir Arthur Clay in a letter points out with much truth that treating painting as a means for conveying ideas is not opposed to its use for portraying "pleasing shapes and beautiful colours," which is no more than saying that one is the proper robe for the other. The fact that there is a lack of academic propriety and a disregard for the past in much of the new work, is one which should not surprise us—it is a very healthy sign. It is pledged to reality, and seeks direct expression, and, feeling well itself, will not wait upon authority or the physician for leave to be itself. Hence we see the elements of a renaissance of English art, freer from foreign influences and pregnant with possibilities for the future, because it arises out of genuine necessity of self-expression, is more withdrawn from worldly and foreign influences, and yet more attached to the common life.

GENERAL NEWS.

Professional Announcements.

Mr. Alfred Saxon Snell, F.R.I.B.A., F.R.San.I., has taken into partnership Mr. Rees Phillips, A.R.I.B.A., who has been associated with him for upwards of fifteen years. The partnership dates from July 1, 1921, and the practice will be carried on under the title of Alfred Saxon Snell & Phillips, at 9, Bentinck-street, Manchester-square, W.1.

Mr. George H. Wenyon, of the firm of Poynter & Wenyon, has left for India to take up his duties as State Architect to the Maharajah of Alwar. He will be returning to this country in April next, and in the meantime correspondence intended for him should be addressed c/o Messrs. Poynter & Wenyon, 8, Grafton-street, Bond-street, W.1.

Mr. A. O. Jester, quantity surveyor, has removed from County Chambers, Corporation-street, Birmingham, to Queen's College, Birmingham.

Mr. T. Sydney Athron, Lic.S.A., has re-opened the practice as architect and surveyor which was carried on by his late father at Dolphin Chambers, Market-place, Doncaster, under the style of Athron & Beck. Mr. Athron would be glad to receive manufacturers' catalogues and lists.

An Architect's Estate.

The late Mr. Thomas Muirhead, architect, of Manchester, left estate valued at £8,684.

Obituary.

We regret to announce the death of Mr. Frank Gatley Briggs, F.R.I.B.A., of the firm of Briggs & Thornely, architects, of Liverpool, which took place suddenly at the Palace Hotel, Birkdale, on September 28. Deceased was 59 years of age.

The *Journal* of the Society of Architects announces the decease of the following Members of the Society:—Thomas F. Brazeley (Bournemouth), Arthur B. Linford (Wombwell), and John B. Morgan (retired Member).

Building in Regent-street.

In connection with the illustrations of building operations now in progress in Regent-street in our last issue, we would point out that the building to the right of Messrs. Hamley's, on page 412, is for Messrs. Burnet & Co.; the architect for this building is Mr. G. Thrale Jell, A.R.I.B.A, of 52, Shaftesbury-avenue, W.1.

Westminster Vestry Hall.

It is announced that the Westminster City Council has given notice to their lessees, Messrs. Goddard & Smith, of the Vestry Hall, 196, Piccadilly, determining the lease next Christmas, because of the Council's intention to rebuild the property. The question of rebuilding the property is to be the subject of a discussion at the next meeting of the Council.

West of England Health Exhibition.

A West of England Health and Home Exhibition is to be held in the Drill Hall, Plymouth, from December 7 to 17, 1921. The exhibits will include building, decoration, furnishing, lighting, heating, cooking, labour-saving devices and other subjects covered by the title of the exhibition. The Organising Manager is Mr. Ewart Watson, of 116, Tavistock-road, Plymouth.

The Institute of British Decorators.

The syllabus of the Incorporated Institute of British Decorators for the session 1921-22 has now been issued, and contains notices of the following papers to be read:—Mr. Ivor Beaumont on "Architecture and the Allied Crafts," October 11; Mr. W. G. Raffe on "Light and Colour in Decoration, with Special Reference to the Psychological Side," November 8; Mr. Shadrach Hicks on "Art in Modern Education," December 13; Mr. A. Wilcock on "The Decorations at Versailles," January 10; Mr. R. A. Dawson on "Celtic Art: Its Development in Christian and Pre-Christian Times," February 14; Mr. J. A. Christie on "1872–1922: The Outlook of the Decorator Then and Now," March 14. The meetings will be held at Painters' Hall, E.C.4, at 7.30 p.m.

Horse Guards' Parade.

The Committee of the Brigade of Guards' Memorial, of which H.R.H. the Duke of Connaught, K.G., is Chairman, and Lt.-Gen. Sir Alfred Codrington, K.C.B., K.C.V.O., is Vice-Chairman, will shortly have before it the competitive designs for the Brigade of Guards' Memorial from the sculptors who have been invited to take part in the competition. Sir Thomas Brock, R.A., and Sir Reginald Blomfield, R.A., have been appointed assessors. The site of the memorial will be provided by an apse to be formed on the west side of the re-modelled Horse Guards' Parade, and will have a frontage of 150 feet on to the Parade Ground. Some 13½ tons of gunmetal from German guns will be melted down for use in connection with the memorial.

The Liverpool Architectural Society.

The syllabus of lectures to be delivered before the Liverpool Architectural Society during the session 1921–22 contains the following: October 18, Mr. S. Bylander on "Concrete"; November 1, Professor C. H. Reilly on "Architecture and National Taste"; November 22, Mr. W. T. Plume on "Architects and Architectural Journalism"; December 6, Mr. S. C. Ramsey on "The Architectural Treatment of a Small House"; January 24, Mr. E. W. Martin on "An Architectural Student's Impressions of Paris"; February 7, Mr. Austen Hall on "American Departmental Stores"; February 21, Mr. E. R. F. Cole on "Colour and Architecture"; March 7, Mr. H. A. Dod on "The Interior Decoration of a Liner"; March 21, Mr. Maurice E. Webb on "Present-day Architectural Problems"; and April 25, Presidential Address by Mr. Gilbert W. Fraser. The meetings will be held at 13, Harrington-street, Liverpool.

Alton War Memorial.

MR. B. D. CANCELLOR, M.S.A., Architect.

[This memorial is erected in the grounds of the Alton Cottage Hospital, facing the main road. Mr. D. J. Kemp was the builder.

The South Wales Institute of Architects.

The South Wales Institute of Architects, of which Mr. Henry C. Portsmouth, F.S.Arc., is the President, has issued its report for 1921-22. The report contains lists of names of the officers and members of the Institute, the balance sheet for the past year, the address by the retiring President (Mr. Ivor P. Jones) delivered in March last, reports from the four branches (the Central, Western, Eastern, and Northern), a report of the proceedings at the last annual dinner, the scale of professional charges, and other useful general information. In referring to the School of Architecture at the Cardiff Technical College, opened last year, under the direction of Mr. W. S. Purchon, M.A., A.R.I.B.A., it is stated that during the past year there have been about forty students in the school, and the amount of good work which has been produced by them suggests that, in the later years of their courses, a very high standard will be reached. It was felt strongly that the importance of the subject and the number of students justified an increase of staff, and the School has secured as Assistant Lecturer, Mr. R. H. Winder, M.A., A.R.I.B.A. Provisional recognition has already been granted by the R.I.B.A. for the first three years of the full-time course, and when the fourth and fifth-year courses are in being they will also receive recognition from the R.I.B.A., so that the present exemption from the R.I.B.A. Intermediate Examination will be extended to practically the whole of the R.I.B.A. Final. Arrangements are being made to add to the facilities a degree course for matriculated students and an evening atelier. With regard to the former, the scheme has been provisionally approved, and it is anticipated that it will commence early this month.

COMPETITION NEWS.

Wandsworth.

The premiums of 100 guineas and 50 guineas in the Wandsworth Borough Council's competition for the lay-out of a portion of the Watney Estate have been awarded as follows:—

First.—Mr. T. R. Somerford, A.R.I.B.A., 131, Regent-street, W. 1.

Second.—Messrs. Bridgman & Eggins, 24, Applegarth-road, W. 14.

Hastings.

FOR THE HASTINGS TOWN COUNCIL.—Designs for a proposed music pavilion. Premiums, £150, £100, and £50. Conditions, &c., may be obtained from Mr. D. W. Jackson, Town Clerk, Town Hall, Hastings. Deposit, one guinea. Professor S. D. Adshead will act as assessor. Sending-in day, November 30.

Southend-on-Sea.

FOR THE CORPORATION.—Designs for the renovation of the Pier Pavilion and the construction of a colonnade between the Pier entrance and the Pavilion. Sending-in day, November 30. (See advertisement this week.)

Royal Academy Ateliers.

The *esquisse* for the first monthly competition for the new Session of the Royal Academy Ateliers will be held *en loge* at Burlington House, W. 1, on October 8, from 9 a.m. to 9 p.m. By the kindness of Mr. H. Greville Montgomery the Royal Academy Ateliers are able to offer numerous money prizes, one of fifty pounds, seven of twenty pounds, and one of ten pounds, in connection with this competition.

Other Competitions.

Other competitions still open include the following (the dates mentioned are (1) the sending-in date and (2) the date of our issue in which full particulars were given):—Auckland War Memorial: February 28, 1922; September 26. Labour-Saving House: November 30; September 9. Harrogate War Memorial: December 1; September 23. Kirkcaldy War Memorial: October 31; September 30. Birmingham War Memorial: October 12; June 17.

CORRESPONDENCE.

The Treatment of Outside Oak.

Sir,—There is an inquiry in your Correspondence Column of the 30th ult. as to the "best way to treat oak in outside work in order to obtain a medium dark-brown appearance, and how to treat oak flooring to obtain a permanent dark-brown colour."

May I point out that either treatment of oak is quite wrong, and cannot fail to prove unsatisfactory? Even if by means of stains, creosote, or other treatment the proposed colours are obtained, the results can only be superficial, and each year they will wear or fade in patches. A fine wood such as oak is altogether too good to be treated like a soft wood without interesting grain.

The proper treatment of external oak is to leave it alone and in one year it will have lost the ugly yellow shade of newly wrot wood and will have turned a pleasant, cool grey. This will improve year by year, and the nature of oak is such that it will stand for generations even in a southerly aspect without any protective treatment.

As oak flooring is not exposed to weather it takes much longer to change from yellow to grey, and should be painted over with hot lime, which should be allowed to dry on. Twenty-four hours later, the lime should be brushed off with a wire brush, when the colour will be found greatly improved. If the wood is very hard the process may be repeated as often as desired, but if the lime is left on for longer than the time indicated it will be more difficult to remove and nothing will have been gained. The floors should not be waxed or oiled, as this would prevent mellowing by the atmosphere; they should be washed, with or without soap, weekly, as necessary, no more water being used than is essential. Each year the boards will improve in colour, and in a few years will rival old floors which have had similar treatment for generations and which are so greatly admired. Floors so treated show off rugs of any colour to great advantage, forming, as they should do, a quiet and pleasing background. They are also free from the danger of slipping, which is so serious on waxed floors in this country, where they are not so general as on the Continent.

Nathaniel Lloyd.

"London Unique."

Through Roads: Nos. 3, 4, 5 and 6.

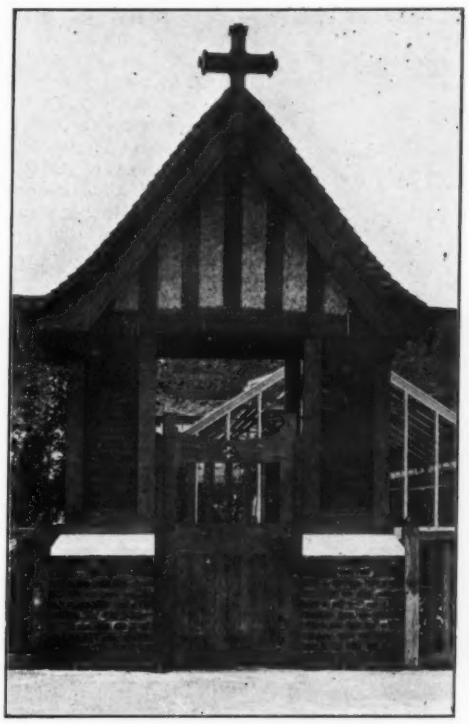
Sir,—In the sketch of a series of new through roads, avenues, or parkways which may be brought about in reconstruction, No. 3, "on the western flank of Primrose Hill," already referred to in *The Builder*, may be said to be primarily a duplication of Avenue-road. The latter is the existing outlet northward for traffic from Regent-street, and for a possible north to south trunk road from the "Regal Circle" to the Outer Circle at York Gate as outlined in *The Builder* for February 4.

The width of Avenue-road is not that of a main road. As an alternative to widening, its "hinterland," which is excessive, might be scheduled and thrown into the Park, together with the area of the waterworks adjacent. Suitable new roads might then be formed and, for economy in the work, façaded with stately terraces after the style of Regent's Park.

Connected to the Outer Circle at its southern end by a bridge over the canal, the new main north to south connection would leave Primrose-hill at the confluence of Elsworthy-road and Queen's-road, where a traffic "feature" would be formed to which St. John's Wood Park with its fine road would be opened up.

No. 4 would be in Kentish Town and stretch between Camden-circus, where six roads converge, and Parliament-hill at Gospel Oak. Continued north *via* Kenwood, and possibly under Hampstead-lane, it would emerge on the L.C.C. property there, and at a suitable point be directed to Finchley-road on the left and to the Great North-road on the right.

No. 5 is a pre-war suggestion and would spring from the proposed new Civic Centre at Smithfield. It would proceed north-westward *via* Lloyd-square and St. James' Church, Pentonville-road, to York-road, near Copenhagen-street, thence to a circus formed above the lines in the railway area, where radials would be directed in several directions. The main radial would connect with a traffic feature



Herne Hill War Memorial.
Mr. Victor Wilkins, Architect.

[This memorial is in the form of a lych gate. The money for it was subscribed by the tenants of the Peabody Estate, Herne Hill. The memorial is carried out in English oak and the two bronze inscription panels were executed by Mr. George Alexander, sculptor. Mr. Victor Wilkins, of 12, York-buildings, Adelphi, W.C. 2, is the architect.]

and centre of first-rate importance, to be formed at a suitable point in the area just south of Prince of Wales'-road, and between Chalk Farm-road and Kentish Town-road. There the projected new roads and the existing main roads near would be directed to converge, together with railways from all directions on an underground plan.

No. 6 may be said to be a continuation of No. 5 northward along Haverstock-hill. At the Town Hall, Hampstead, it would be directed, on the right to Gospel Oak, and on the left along the course of the Midland Railway to Fitzjohn-avenue. There two branches would be formed, one to Finchley-road, West-End-lane railway centre and the main road, Shoot-up-Hill, at Minster-road; the other would be directed under Arkwright-road at Frognal, and Frognal-lane at Langland-gardens, thence to Platts-lane between Kidderpore-gardens and Ferncroft-avenue. It would then proceed on the right to Golders Green, by way of the garden suburb to Hampstead-lane, where it would meet with No. 5. On the left (in Platts-lane) it would be directed across Finchley-road and Cricklewood-lane towards Upper Hendon, suitable for extension to Elstree and Boreham Wood.

It may be explained that the latter would be the route of London's new main supply of pure water on gravitation principles from the Welsh Hills, as projected by the late Sir Alexander Binnie. It would be distributed to all parts of London by the series of new roads.

It may be remarked that it is reckoned the reconstruction of the Metropolis will be carried out in sections, suitably sub-divided. The area traversed by Nos. 4 and 5, stretching as it would from the City through portions of Finsbury, Islington and St. Pancras, to Camden Town, Kentish Town and Parliament-hill, might be taken as Section No. 1, to be re-planned accordingly. It is over four miles in length, and the improvable area may be estimated at about two square miles.

"O. B. I. T."

The Cost of Working-Class Dwellings.

Sir,—In my letter in your issue for September 23, I had no intention of disparaging Mr. Yerbury's suggestion for financing a housing scheme, which is infinitely better than the one adopted, and possibly the only one under present conditions. However, fifty years is much too long a period for this class of property, and we want the money now more than we shall in fifty years time—at least, we hope so. It is a pity the name "working-class dwellings" cannot be abolished and "housing" substituted, as the present title has no definite meaning, and has come to be associated with "giving something for nothing."

So long as the cost of all local administration is indiscriminately planted on building, housing is impossible. That is the plain truth, and nothing will alter it. The rates make it necessary for a building owner to find additional capital equal to the capitalised amount paid in the £, over and above the actual cost of the building. Any such charge is an obstacle, 10s. in the £ and upwards being sufficient to stop building, apart from exceptional cases, altogether. Mr. Yerbury's article in your issue for September 16, is by far the best statement of the situation yet published, and, personally, I should like to see it made the basis of public lectures in every town in the country. It is quite time that something was done to remove the present ignorance and apathy which are the most serious obstacles of all.

E. G. Holtom.

Building in Regent Street.

Sir,—In last week's issue of your paper we observe a photograph illustrating the Regent-street front of Messrs. Hamley's premises, and under the same our name as architects. We desire to make it clear to your readers that although we are architects for Messrs. Hamley's new buildings we are not in any way responsible for the design of the Regent-street front. This design our clients were compelled to adopt under the terms of their building lease with H.M. Commissioners of Woods and Forests. Whatever merit this design may possess, we feel it our duty to point out that it is a reproduction of Messrs. Swears & Wells' building adjoining, designed by Messrs. William Woodward & Sons.

Collcutt & Hamp.

The Outlook in the Building Industry.

A letter by Mr. F. J. Gayer, on "The Outlook in the Building Industry," is given on p. 459.

The Old Palace Yard, Coventry.

The Bishop of Coventry presided last week at a meeting in Coventry called to support the acquirement of the Old Palace Yard, portions of which date back to the fourteenth century. The principal part of the building is an example of the wealthy merchant's house in the middle of the seventeenth century. The proposal is that the buildings now used for a variety of commercial objects should be restored and used for diocesan purposes. The bishop suggested that the rooms were very suitable for use as a diocesan record office, audience chamber, and places for social gatherings. He hoped also to see a large adjoining building acquired which could be used as a working-men's club.

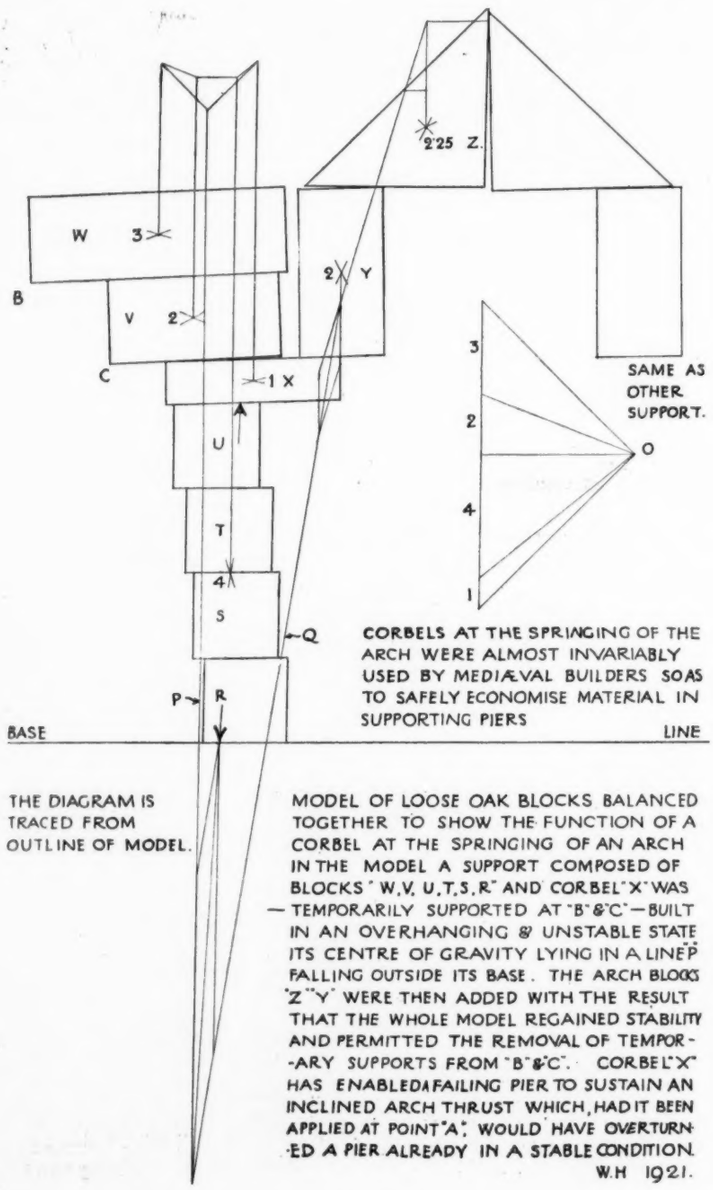
WESTMINSTER HALL ROOF AND MECHANICAL SCIENCE.

By W. HARVEY.

No one who has seen the gigantic arched hammer beam roof trusses spanning the great hall of William Rufus' Palace can fail to wish for some credible explanation of their construction—the purpose of each mighty baulk, and the connection between the scientific weight-carrying function of the whole with the graceful artistry exhibited in the contours and proportions of the cusped arches of ancient oak.

Stimulated by the wonder of the place, men of fame have not hesitated to fulfil this desire with explanations so numerous and so varied as to add a new interest to the roof, in that when all are read together the differences between these pronouncements seem to indicate that the roof structure was not only wonderful but incomprehensible. Some writers have cut the matter short by suggesting an ornamental purpose only for any members whose constructional value did not seem immediately apparent. Others, misled by the division of the roof trusses into approximately triangular spaces, have concluded that it was a "triangulated structure" comparable with a modern steel-framed principal of a railway station roof and capable of analysis by the same mechanical rules and formulæ. The report of H.M. Office of Works upon the present repair of the roof clears the ground of this supposition by authoritatively proving the roof to be acting in a directly contrary manner to what might be expected from a steel-framed truss of similar form.

The problem remains unsolved, its mystery impenetrable by the laws of graphic statics. The most promising approach to an understanding of the roof is by the study of the mechanical expedients adopted by builders in times and countries where the use of modern methods has not superseded and obliterated the ancient trend of thought. At the time when Richard II was extorting money from his reluctant subjects in order to squander it in magnificence of building, he was but following the general tendency of the century, when mediæval constructional art, conscious of its powers, was expressing itself in elaborate and grandiose constructions. Churches of unprecedented span in process of erection at Bologna and Florence, the new palace of the Moorish kings lately completed at Granada, and the enormous vault of Sultan Hassan at Cairo, all demonstrate the varied resource and skill of mediæval artists at the time of the Westminster Hall restoration. There can be no doubt that the builders of that day viewed their theories of construction with the same unswerving faith in which a modern practitioner consults his tables of formulæ and strengths of materials, and by examination of their finished or ruined works it is possible to reconstruct some part of the system of mechanical science upon which they based their work.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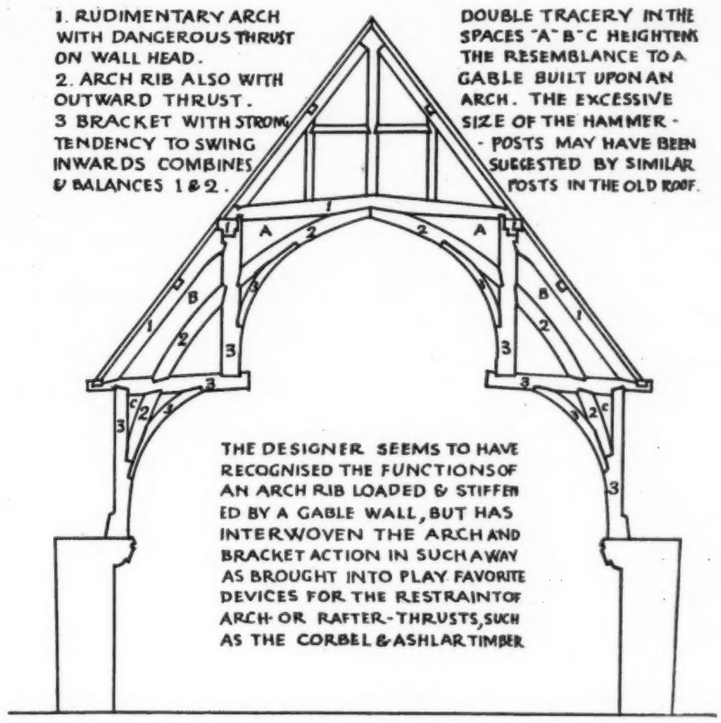
SAME AS OTHER SUPPORT.
CORBELS AT THE SPRINGING OF THE ARCH WERE ALMOST INVARIABLY USED BY MEDIÆVAL BUILDERS SO AS TO SAFELY ECONOMISE MATERIAL IN SUPPORTING PIERS
THE DIAGRAM IS TRACED FROM OUTLINE OF MODEL.
MODEL OF LOOSE OAK BLOCKS BALANCED TOGETHER TO SHOW THE FUNCTION OF A CORBEL AT THE SPRINGING OF AN ARCH IN THE MODEL A SUPPORT COMPOSED OF BLOCKS "W,V, U,T,S,R" AND CORBEL "X" WAS — TEMPORARILY SUPPORTED AT "B" & "C" — BUILT IN AN OVERHANGING & UNSTABLE STATE ITS CENTRE OF GRAVITY LYING IN A LINE "P" FALLING OUTSIDE ITS BASE. THE ARCH BLOCKS "Z" "Y" WERE THEN ADDED WITH THE RESULT THAT THE WHOLE MODEL REGAINED STABILITY AND PERMITTED THE REMOVAL OF TEMPOR- -ARY SUPPORTS FROM "B" & "C". CORBEL "X" HAS ENABLED A FAILING PIER TO SUSTAIN AN INCLINED ARCH THRUST WHICH, HAD IT BEEN APPLIED AT POINT "A", WOULD HAVE OVERTURN- ED A PIER ALREADY IN A STABLE CONDITION.
W.H 1921.

Medi val construction concerned itself with the design of vaults and arches as ordinary elements of utilitarian building, and wherever this is the case, as in some districts of Palestine at the present day, certain expedients are consciously adopted which have for their object the reduction of the dangerous lateral thrusts produced by arches of ordinary shapes—or even of true catenary shape—when mounted upon supports raising their springing line above ground level. The well-known forms of buttress and flying buttress are the most obvious of mediæval expedients, but these are generally augmented, or sometimes replaced, by heavy top weights built above the supporting piers, stiffening walls built upon the arch itself, corbels introduced at the springing and lower courses of the arch, joggles, or tenacious mortar to join stone to stone.

The most efficient means for resisting the outward thrust of an arch perched upon high supports is, of course, the tie bar across the span; but this favourite expedient of the south and east was only sparingly used in English Gothic practice, and though unquestionably understood never became popular, as it certainly does not harmonise so well with the vertical lines of ribs and mouldings as with the horizontal bands of colour decoration suited to sunnier lands. Carpenters as well as masons attacked their problems on similar lines, and the means of restraining the outward pressures of rafters ran parallel to those dealing with stone arches.

The device composed of upright ashlar timbers and horizontal bed-plates connecting them with the feet of common rafters had been in use for many years, and had for its function the combination of the sloping pressure of the rafters with a vertical pressure down the ashlar and the application of the resultant at a point on the inner, or safe, side of the wall. The longer the bed-plate and the more it projects into the hall the more perfect will this action become, and the arrangement of hammer beam, hammer post, and lower principal rafter embodies the device on a gigantic scale with the lowest section of the great arched rib placed in position to conduct the resultant pressure to the wall at a point safely low down on its inner face. The habit of thought which allowed the designer to perch a hammer post of two-and-a-half tons upon the free end of each hammer beam was similar to that of a mason who expected the pinnacle above his buttress to assist in deflecting an arch thrust into a safer and more nearly vertical direction. Two differences exist between the practical application of the principle by the carpenter and the mason. Stone being less suitable for acting as a beam or cantilever, the corbels and corbel courses at the lower part of a mediæval arch were usually of small dimensions in comparison with the arch span. The value, however, of the corbel in assembling and applying the combined thrusts of arch and steadying top weight was universally understood, and in India, where exceptionally large and sound stones were obtainable, the corbels and corbel courses formed the greater part of the arch. Timber, more suitable for use as a cantilever, could be found in far greater lengths and permitted the combination of the oblique pressure of principal rafter with the vertical pressure of the hammer post, although these were applied at points 18 ft. apart at opposite ends of the hammer beam. The second difference is in the relative positions of the vertical and the oblique thrusts. In a masonry structure the oblique arch thrust happens to come nearer the inside of the building than the line of the vertical weight of pinnacle. The reverse is the case in Westminster Hall, where the hammer post, with its pinnacle-like function of balance weight, is placed inside the raking thrust of the principal rafter.

It must not be supposed that the great arch rib was, therefore, definitely intended by the


1. RUDIMENTARY ARCH WITH DANGEROUS THRUST ON WALL HEAD.
2. ARCH RIB ALSO WITH OUTWARD THRUST.
3 BRACKET WITH STRONG TENDENCY TO SWING INWARDS COMBINES & BALANCES 1 & 2.
DOUBLE TRACERY IN THE SPACES "A" B" C HEIGHTENS THE RESEMBLANCE TO A GABLE BUILT UPON AN ARCH. THE EXCESSIVE SIZE OF THE HAMMER-POSTS MAY HAVE BEEN SUGGESTED BY SIMILAR POSTS IN THE OLD ROOF.
THE DESIGNER SEEMS TO HAVE RECOGNISED THE FUNCTIONS OF AN ARCH RIB LOADED & STIFFENED BY A GABLE WALL, BUT HAS INTERWOVEN THE ARCH AND BRACKET ACTION IN SUCH A WAY AS BROUGHT INTO PLAY FAVORITE DEVICES FOR THE RESTRAINT OF ARCH OR RAFTER-THRUSTS, SUCH AS THE CORBEL & ASHLAR TIMBER

WESTMINSTER HALL ROOF

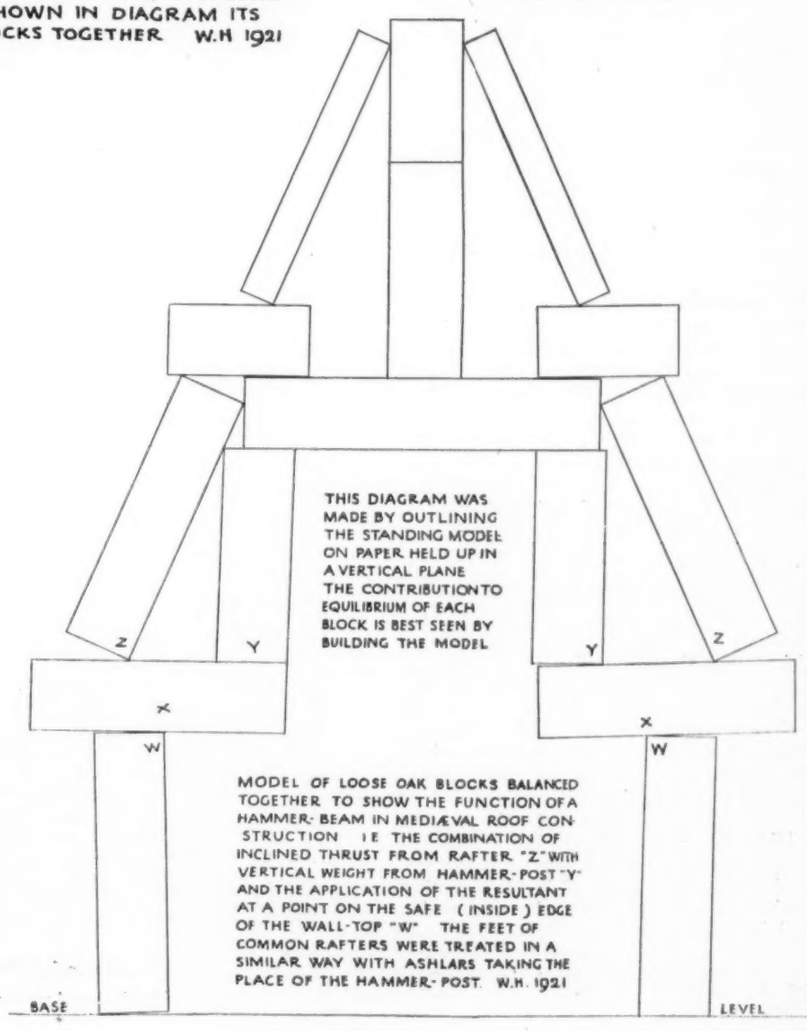
MODEL OF LOOSE BLOCKS SHAPED TO REPRESENT THE MAIN TIMBERS OF WESTMINSTER HALL ROOF TO SCALE BUT PROVIDED ONLY WITH NOTCHES FOR THE JOINTS THE MODEL STANDS IN THE POSITION SHOWN IN DIAGRAM ITS OWN WEIGHT PRESSING THE BLOCKS TOGETHER W.H 1921

designer to be the main support of the truss. Gothic construction is essentially an art of duality and double chances. Arch rings are seldom trusted to stand alone purely as arches. As has been seen, their springing is formed of corbel courses and their haunches are frequently backed up with solid concrete or masonry to a considerable height. In the case of an arch carrying a wall the out-corbelling action of the stones above the haunches is calculated to contribute to strength as well as to balance weight, and in the trusses of Westminster Hall roof the main timbers are all arranged to behave like the stones of an arch ring steadied by a gable wall built upon it. By keen observation and the tradition of centuries the value of each component part of such an arrangement, considered both from its supporting and balancing functions, was well known to the builders of the fourteenth century, and it was possible for a carpenter dealing in long pieces of material to construct a skeletonised version of arch ring and stiffening wall of timbers crossing, balancing, and interpenetrating without knowing anything about the theory of triangulation or the possible tensile functions of material. With the exception of the hammer beam, which acts as a gigantic corbel or double cantilever, every timber, including the tracery bars in the Westminster Hall truss, is designed to behave as part of a composite arch contributing its strength in compression, and so arranged and balanced as to conduct the resultant total compression to the stone corbels upon which the wall posts stand.

Experiments with models built up of loose blocks clearly demonstrate both the compressive and balancing functions of the timbers.

The absence of any serious attempt to give tensile connection to the original joints of the great timbers, which were indifferently joined by stub tenons and treenails, often badly selected and inserted, points to the impossibility of the design having been made by a genius in triangulation born some centuries too soon.

Stated briefly, each truss may be regarded as a composite arch built up of: (1) An arch in three blocks, two lower principal rafters and the collar beam; (2) the great arch rib; and (3) a bracket arrangement consisting of wall post, hammer beam, hammer post, and lower and upper carved struts. The dangerous thrust of system (1) is safely combined by system (3) with the arch rib (2), and the resultant whole forms an assembly of elements which push and lock themselves together under their own weight and that of the roof covering.


THIS DIAGRAM WAS MADE BY OUTLINING THE STANDING MODEL ON PAPER HELD UP IN A VERTICAL PLANE THE CONTRIBUTION TO EQUILIBRIUM OF EACH BLOCK IS BEST SEEN BY BUILDING THE MODEL
Z
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MODEL OF LOOSE OAK BLOCKS BALANCED TOGETHER TO SHOW THE FUNCTION OF A HAMMER-BEAM IN MEDIÆVAL ROOF CONSTRUCTION I E THE COMBINATION OF INCLINED THRUST FROM RAFTER "Z" WITH VERTICAL WEIGHT FROM HAMMER-POST "Y" AND THE APPLICATION OF THE RESULTANT AT A POINT ON THE SAFE (INSIDE) EDGE OF THE WALL-TOP "W" THE FEET OF COMMON RAFTERS WERE TREATED IN A SIMILAR WAY WITH ASHLARS TAKING THE PLACE OF THE HAMMER-POST W.H. 1921
BASE
LEVEL

The Bartlett School of Architecture.

The syllabus for the session 1921-22 of the Bartlett School of Architecture and Department of Town-planning, University College, University of London, has now been issued, and contains comprehensive résumés of the work of the various classes for the coming session. The session is divided into three courses, the first of which commenced on October 3. In a foreword in which the objects of the School are set out, it is stated: "It is recognised that building is as much an art as it is a science, and that architects are artists who need to grasp not only the realities of the factors governing their work but also the technique associated with each particular branch of it. It is impossible, in so far as building is concerned, to define where art begins and where science ends. An architect more than any other artist should be instructed to associate his work with the conditions of modern life; he must be familiar with the underlying principles of the sister arts of painting and sculpture. His knowledge of building should be based upon a close appreciation of history, tradition and research; moreover, regarding the scientific aspect of his profession, he must be guided to regard construction as being organic and functional and not a separate and independent theory."

MODERN SCULPTURE.*

A BOOK on sculpture, if reasonably intelligent, is always to the good; and the book by Mr. Kineton Parkes is certainly all that could be required in the way of intelligent exposition. We say exposition rather than criticism. The present volume, which is to be followed by another on the Continental schools, covers a good deal of ground. It deals with the sculpture of Great Britain, Australia, Canada, Japan, and North and South America, besides containing chapters on the status, materials, and methods of sculpture. It also includes a chapter on the appreciation of sculpture, and contains numerous illustrations. The chapter on Japanese work does not seem to fall quite harmoniously into the scheme of the volume; but, for the rest, all that the author has to say, his biographical résumés, will interest those who care about an art which, so far as Great Britain is concerned, has practically sprung into existence during the past century or so. Previous to the first half of the nineteenth century we had certainly no group of men practising sculpture who could be classified under the generic title of "school." During the second half of the nineteenth century sculpture became a living force in British art; and to-day we have not only one school of sculpture, but several schools. Mr. Parkes' chapters on the educational groups at South Kensington and Lambeth are of special interest and importance, because it is largely the men who were trained at these schools who are the moving spirits in the art to-day. We do not, in saying this, wish to disregard the influence of some of the earlier men who are happily still with us. The technical excellence and artistic quality of much of Sir Hamo Thornycroft's work, for instance, are perhaps not exceeded by any of the artists of a later generation. Then there is Alfred Gilbert, with his exigent artistic conscience which has never permitted him to give to the world anything but his best. Prior to these was Alfred Stevens, the first great master of British sculpture, a man of genius who was rather neglected in his time, but who, as Mr. Parkes points out, gave the first impetus to the art in this country.

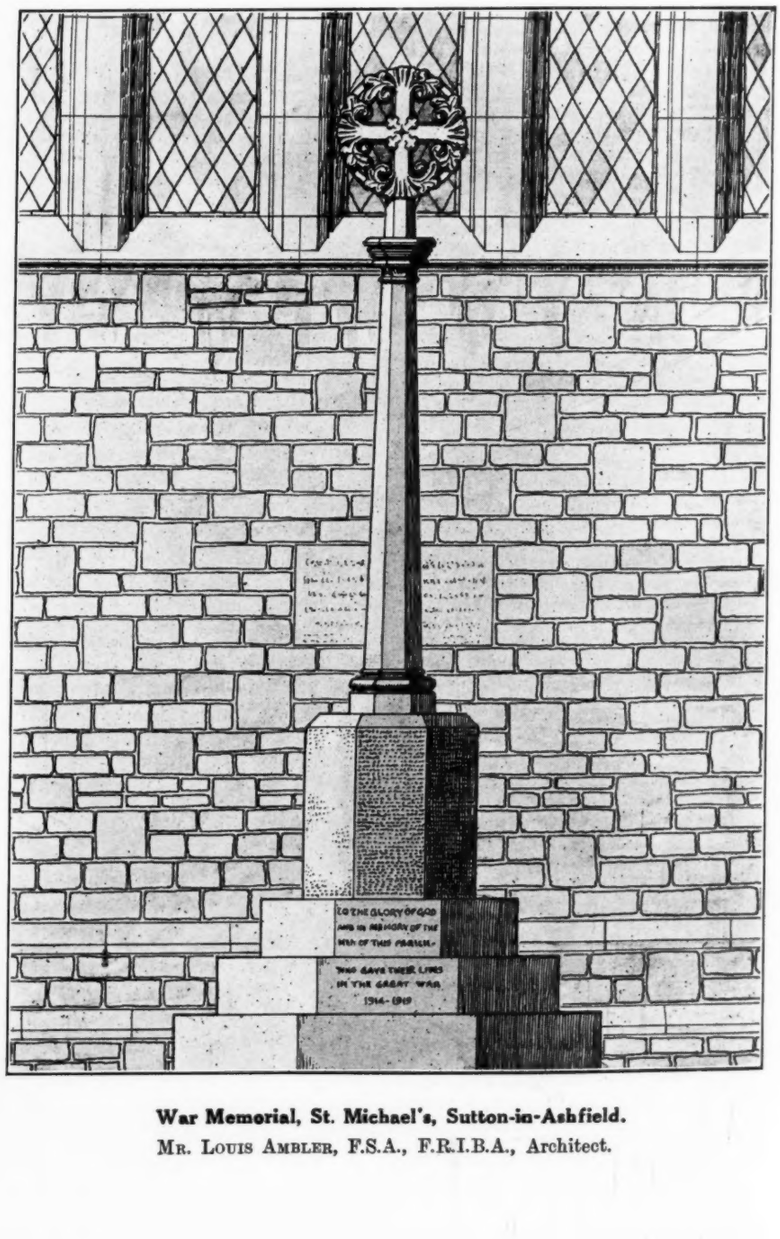
We find the chapters on the English schools the most interesting. The author gives due credit to the influence of the early teachers from France—Dalou, Legros and Lanteri—two of whom were themselves great artists, and the third, if not quite of the same artistic calibre, was certainly a man with the gift of teaching and an inspiration to his pupils. We have suggested that the chapters are rather an exposition than a criticism; biographical details are given of practically all the modern men with useful lists of their works—but the author scarcely attempts to distinguish the qualities of the various artists. He has an obvious regard for susceptibilities, although we can, perhaps, detect between the lines the artists whose works he values most. We quite sympathise with this point of view in a book addressed to the general public. The great thing at the moment is to arouse a more general interest in the art, to show by exposition and illustration that we have men amongst us who are capable of doing good work.

In his chapter on the appreciation of sculpture, Mr. Parkes is more inclined to speak frankly. Was it not Michel Angelo who first said that there is only one art? But if there is only one art, there are many artists; and the unity of the arts is sadly lacking in this country. To-day, for instance, there does not exist the collaboration between the architect and the sculptor that has always existed in France, and that was, indeed, one of the most marked characteristics of the art of the Italian Renaissance. If we are to accept as true the criticism in the chapter on the appreciation of sculpture, the misunderstanding between architect and sculptor would seem to be deplorable. But, we think, in his love for sculpture, Mr. Parkes does both the architect and the sculptor some injustice. In the list which he gives of modern London buildings on which sculpture is seen to disadvantage we should imagine the fault to be rather the sculptor's than the architect's. It is inconceivable that when an architect commissions a sculptor to adorn his building he does not indicate the precise position and purpose for which the sculpture is required. Is the truth not rather that the sculptor's architectonic knowledge fails him in the proper adjustment of sculpture to architectural purpose?

* "Sculpture of To-day." Vol. I—America, Great Britain, Japan. By Kineton Parkes. London: Chapman & Hall, Ltd. Price 25s. net.

WAR MEMORIAL AT ST. MICHAEL'S CHURCH, SUTTON-IN-ASHFIELD.

This memorial, which will be unveiled shortly, has been executed in Portland stone by Messrs. Robert Bridgeman & Sons, of Lichfield, from the designs and details prepared by Mr. Louis Ambler, F.S.A., F.R.I.B.A., of Temple Chambers, Temple-avenue, E.C. 4, architect of the nave and aisles of the Church built about twelve years ago, with the 13th-century character of which the monument is designed to be in harmony. The site is central between the west end of the Church and the dwarf wall and railing next to the main road, and the memorial has been planned so that the names of the 228 men of the parish who gave their lives in the war will be on the three front faces of the pedestal, in two columns on each face, so that they can all be easily seen through the railings from the road.



War Memorial, St. Michael's, Sutton-in-Ashfield.
MR. LOUIS AMBLER, F.S.A., F.R.I.B.A., Architect.

Leading Contents.

	PAGE
THE FUTURE OF THE COUNTRY SEAT	435
NOTES	436
GENERAL NEWS	438
COMPETITION NEWS	438
CORRESPONDENCE	439
WESTMINSTER HALL ROOF AND MECHANICAL SCIENCE	440
MODERN SCULPTURE	442
EXHIBITION NOTES	444
MEETINGS	444
MODERNISM AND DESIGN—X.	450
SIXTEENTH-CENTURY LONDON	452
EGYPTIAN ARCHITECTURE: ITS ORIGIN, EVOLUTION AND CONSTRUCTION	454
INVERNESS WAR MEMORIAL	456
THE USE OF ELECTRICITY IN WORKING-CLASS DWELLINGS	457
HOUSING AND TOWN-PLANNING NOTES	458
THE BUILDING TRADE	459
NEW INVENTIONS	460
DEVONSHIRE HOUSE GATEWAY	461
CONTRACTS, COMPETITIONS, ETC.	462
PROPOSED NEW BUILDINGS	464
PRICES CURRENT OF MATERIALS	465
CURRENT PRICES FOR BUILDING WORK IN LONDON	436
TENDERS	467

ILLUSTRATIONS.

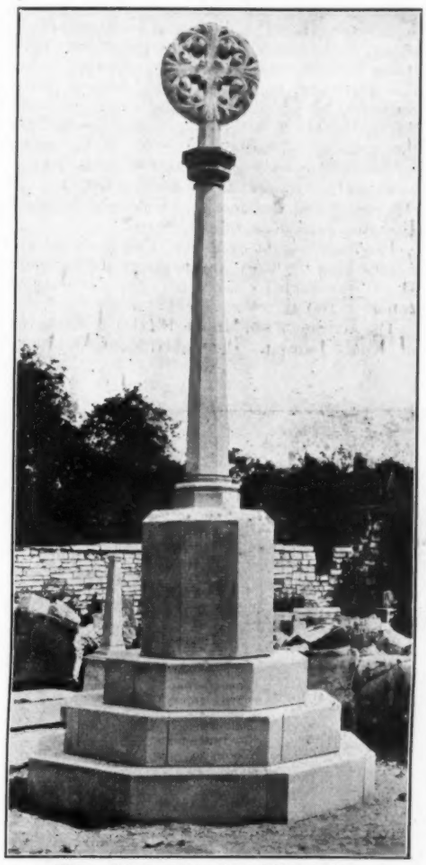
Manchester Royal Exchange.

We illustrate this week the reconstructed Manchester Royal Exchange, to be opened by His Majesty the King to-morrow (October 8). The architects for the reconstruction are Messrs. Bradshaw Gass & Hope, of Bolton, whose design was selected in competition in 1914.

The architectural treatment of the exterior and interior presented a difficult problem, as it was desired that the finished structure should form a complete entity of distinctive character and at the same time certain features and portions of the old building had to be retained. The ground floor, with shops on all fronts, is treated with rusticated stone piers to form a base of suitable strength. Above this rises the Corinthian order which marks the position of the Exchange proper in the building. The lines of this order, terminated at the corners of the structure and strengthened at the main entrances by pylon features, are carried round all four façades, and above the cornice of the order (carrying upwards its lines) an attic story crowned and enriched by an open balustrade leads up to the steep-pitched, green-slated roof surmounted by a well-defined ridge line. The filling of the bays between the columns of the main order has been designed to give scale to the façades and at the same time to provide the maximum amount of light essential for business requirements. The lower part is treated with arches containing a small order, above which and immediately beneath the main entablature runs a series of grouped windows.

Advantage has been taken of the irregularities of the building lines to give the frontages to St. Ann's-square and Cross-street a slight curve throughout their length, thus softening and improving the lines of the cornice and giving greater continuity to the whole design.

In the centre of the main fronts are placed the two principal entrances to the Exchange Hall (the *raison d'être* of the whole building). The more important of these—that on the St. Ann's-square side, is approached through a spacious archway within which rises a flight of steps passing through a richly-treated semi-circular stone vestibule with a Doric order, above which runs a balustraded open balcony, the whole surmounted by an enriched stone-work semi-dome. In addition to the two main entrances four subsidiary entrances are provided with staircases and passenger lifts to give access to all parts of the building. The clock tower at the corner of Market-street and Exchange-street has been retained and embodied in the completed structure, and at the St. Ann's-square and Bank-street end of the building the tower is balanced by a curved cornice treatment, crowned by a low-set slated dome.



War Memorial, St. Michael's, Sutton-in-Ashfield.

MR. LOUIS AMBLER, F.S.A., F.R.I.B.A., Architect. (*See p.* 442.)

The Great Hall of the Exchange occupies practically the entire extent of the site on the first floor, with the exception of the space required for walls and staircases; it is 310 ft. long and 215 ft. wide. Crossing the Hall between the principal entrances there is formed a colonnade with three great arches supported on piers and grouped columns. The Corinthian order with its marble columns, a feature of the interior of the older Hall, has been retained and reproduced in the extension, but all the remaining detail and ornament have been redesigned and remodelled to bring them into proportion and harmony with the greatly increased scale of the interior. Above this Corinthian order runs an attic story having at each side of the Hall a series of clerestory windows, leading up to the enriched plaster ceiling, which is surmounted by two large and four smaller glazed domes (the former having a diameter of 62 ft.). The pinnacles of the lanterns rise to a height of 130 ft. above the street level. The Exchange Administrative Office, Board Room and Master's Room are conveniently arranged *en suite* with the Hall, from which they are readily accessible for all purposes. They occupy the Bank-street—St. Ann's-square corner of the building.

In accordance with the conditions imposed by Act of Parliament, an arcade for foot passengers is formed through the building under the Exchange Hall, but at street level, to replace the old Bank-street, which is closed by the extensions. Shops are placed on either side of this arcade, and opening from it and also having access to St. Ann's-square, Bank-street and Cross-street are restaurant premises.

The basements of the Exchange, which are two stories below street level and hewn out of the solid sandstone at the bottom, are utilised for storage accommodation, with a service of goods lifts, and to these basements access for motor and horse-drawn wagons is provided by an hydraulic hoist from the street connecting to a central cartway traversing the premises at the lowest level.

Externally the buildings are faced with Darley Dale stone on all frontages, the roof slopes are covered with Westmorland green slates, and the domes are formed of patent glazing with lead-clothed steel bars and reinforced glass. The new work throughout is entirely of fireproof construction, constructional steel and reinforced concrete being used for the framework and floor formation. Fibrous plaster is largely used in the interior finishings, ceiling and wall panels, mouldings, and ornament. The floor of the Exchange is covered with maple-wood blocks enclosed in wide margins of walnut. The ventilation, as arranged on the plenum system, will provide an ample supply of air which can be purified and screened as required to meet the varying conditions of atmosphere.

The general contractors for the superstructure, Messrs. William Thornton & Sons, of Toxteth Park, Liverpool, have a history of over eighty years, and claim to be pioneers of the use of many forms of builders' plant now generally employed. The importance of the many contracts they have carried out is evidenced by the fact that on no less than six occasions during the past twenty-five years Royalty has been present, either to lay the foundation stone or at the opening ceremony. During the war, practically all the resources at the disposal of the company were employed on the work of reconstructing this building.

The Trussed Concrete Steel Co., Ltd., of London, were responsible for the design of the reinforced concrete framework and the floors.

Among the sub-contractors engaged on the work were the following:—

Demolition of old building and foundations to new extension.—William Gornall & Sons, Ltd., Bolton.

Plumbing.—J. Jeffrey & Co., Manchester.

Plastering, painting and decorating.—J. Tanner & Son, Liverpool.

Reinforced concrete.—Stuart's Granolithic Co., Ltd., London.

Locks and door furniture.—James Gibbons, Wolverhampton.

Steelwork.—Redpath, Brown & Co., Manchester.

Patent glazing.—Henry Hope & Sons, Ltd., Birmingham.

Sanitary fittings.—Shanks & Co., Ltd., Manchester.

Heating and ventilating.—James Cormack & Sons, Ltd., Glasgow.

Scagliola marble.—Bellman, Ivey & Carter, Ltd., London.

Marble.—Fenning & Co., Ltd., Hammersmith.

Wood block flooring.—Hollis Bros. & Co., Ltd., Hull.

Carving.—Earp, Hobbs & Miller, Manchester.

Electric lifts.—Smith, Major & Stevens, Ltd., Northampton.

[The complete installation of lifts will include eight electric passenger lifts to serve from the various entrances to the upper floors of the building, arranged in pairs for giving continuous service. The lifts are of the latest type, each having a lifting capacity of 6 persons at a speed of 200 f.p.m. and ascending to heights varying from 75 to 100 ft. They are of the switch-controlled type operated by an attendant from the car, and are fitted with polished steel guides for securing smoothness in running. Each car is suspended through the medium of a gravity type safety-gear, for arresting the fall of the car by the automatic gripping of the guides immediately upon the stretching and before the breaking of any one rope, thus giving warning of approaching failure of the ropes. The design of the electric winding engines is such that it is impossible to overwind the car beyond predetermined limits.]

Decoration of board room and Master's room.—Arthur Wardle, Manchester.

Cotton report board, post office telegraph screens, calculating slabs, &c.—Thomas Scott & Co., Manchester.

Asphalte roofing.—T. Faldo & Co., Ltd., London.

Lightning conductors.—John Faulker, Manchester.

Leaded lights.—W. J. Pearse, Ltd., Wilmslow.

Reading room setting.—Kendal, Milne & Co., Manchester.

Floor slabs to old Exchange.—Siegwart Fireproof Floor Co., Ltd., London.

Pavement lights.—Thaddeus Hyatt & Co., London.

Cast-iron balusters, eaves gutters, rainwater and soil pipes.—MacFarlane & Co., Glasgow.

The station and railway offices, parcels department, hotel, public, and staff entrances, offices, boiler house, electrical plant, and hotel stores receiving department are arranged in the two lower and mezzanine floors, with a public concourse giving access to platforms (on north side of building) at platform floor level. The three floors immediately above are arranged for hotel bedrooms and suites, with the restaurant, public rooms, kitchens, service, &c., on the two floors and mezzanine floor above, and a winter garden on the top floor.

The building faces south, rising above and overlooking the town and harbour of Singapore. It is intended to construct the building of concrete and structural steel.

The architects are Messrs. Huxley & Kesteven, of Kuala Lumpur, the Government Architects.

Photo: Stewart Bale.

Reconstruction of Manchester Royal Exchange.
MESSRS. BRADSHAW GASS & HOPE, Architects.

Art metal work.—Hart, Son, Peard & Co., London.

Telephone boxes.—T. Weighill, Liverpool.

Electric light fittings.—Underwood (Manchester), Ltd., Manchester.

Singapore Station Hotel.

This scheme is a preliminary sketch design for an hotel in conjunction with the station and railway offices at Singapore terminal station, for the Federated Malay States Government Railway.

The building generally is arranged with station offices on lower floors and hotel above, the public rooms, &c., being placed over the bedrooms, thus taking advantage of the fine view over the harbour. The site is somewhat behind the town, and the platform level is 25 ft. above street level. Hotel servants and guests' servants are accommodated in a separate building. All stores for the hotel are delivered at receiving stores under the station concourse (street level plan), and taken from there as required by lift to the sixth (restaurant) floor and distributed throughout the hotel and to public rooms by means of an arterial service corridor on the restaurant gallery level. The scheme is self-contained, providing boiler house, supplying steam for electrical plant for lifts and fans, laundry, kitchens and hot-water supply. Lighting will be obtained from the municipal supply. The entire building is to be supplied with artificially-cooled air (in conjunction with the refrigerating plant), with a further system of extract ventilation.

MEETINGS.

THURSDAY—MONDAY, *October* 6—10.

Town-Planning Institute.—Conference at Cambridge.

FRIDAY, *October* 7.

Glasgow Architectural Craftsmen's Society.—Presidential Address, by Mr. Donald S. Pringle. At Glasgow Technical College. 7.45 p.m.

FRIDAY AND SATURDAY, *October* 7 *and* 8.

Royal Sanitary Institute.—Mr. W. H. Makpeace on "Activated Sludge." Mr. G. P. Johnson on "Smoke Pollution of the Atmosphere in the Potteries." At Town Hall, Stoke-on-Trent. 7.30 p.m.

TUESDAY, *October* 11.

Institute of British Decorators.—Mr. J. Beaumont on "Architecture and the Allied Crafts." At Painters' Hall, Little Trinity-lane, E.C. 7.30 p.m.

WEDNESDAY, *October* 12.

Royal Sanitary Institute.—Discussion on "Plumbing and Sanitation on Board Ship." At 90, Buckingham Palace-road, S.W.1. 4 p.m.

THURSDAY, *October* 13.

Society of Architects.—Special general meeting to receive scrutineers' report on the ballot for the election of officers. At 28, Bedford-square, W.C.1. 8 p.m.

Garden Cities and Town-Planning Association.—Prof. P. Geddes on "The City of Jerusalem." At King's College, Strand, W.C.2. 5.30 p.m.

EXHIBITION NOTES.

Royal Society of Miniature Painters.

The twenty-sixth annual exhibition of this Society at the Maddox-street Galleries cannot be said to be distinguished by anything of exceptional merit, though there is an average of capable work. One has to observe in a certain number of the miniatures shown that the representation is somewhat forced and meretricious, denoting an insufficient study of more classic examples. The element of style is sometimes lacking, and the characterisation often poor. This difficulty to raise the art of miniature painting out of the commonplace, with its derivations at times from the coloured photograph—from which it should be a thousand miles away—is observable in the exhibition. Nos. 3 to 14 represent a memorial exhibition of vellum miniatures by the late W. J. Neatby, R.M.S. In these examples, though showing much industry and finish, the lack of imagination is evident. Derivative and conventional, they are yet lacking in the conventions of style and dignity, such as are to be seen in mediæval portraits of similar direction. The obsession towards decorative treatment is very perilous, unless raised to its full stature, and we miss any such native distinction in these examples. No. 36, a pencil drawing by Sir Nevile R. Wilkinson, is refreshing by reason of its accomplishment and distinction of treatment. Nos. 38 and 39, by Mrs. Mabel E. Hankey, are very pleasing. Amongst other good examples are Nos. 44, 75–80, 87, 88, 90, 134. The exhibition also includes medals, jewellery and illuminated manuscripts by members of the Society.

The Colour Woodcut Society.

The exhibition of original colour prints which is now open at the Macrae Gallery, 16, Fulham-road, S.W., the second held by the Society, shows encouraging progress, and is full of interest and vitality. A charm of colour and treatment rests over the examples that should attract visitors, who ought not to miss the opportunity of seeing so interesting an exhibition. The woodcuts are all executed and printed by the artists themselves, and have the agreeable character revealed where this is the case. The best results are obtained where the number of printings do not overlay the particular quality revealed through the wood. No. 65, a landscape by John E. Platt, who has a number of delightful examples at the exhibition, shows the resources of the method at their greatest advantage, and is both in its pictorial charm and treatment quite a masterpiece in its way. There is to be noted in examples here and there a tendency to primitiveness, but on the whole the woodcuts avoid both this and the danger of over elaboration. The resources of the methods are best revealed in recognising that we must work within them. It is difficult, and perhaps invidious, to select particular examples where so many are full of interest, but we may specially note J. D. Ballen's accomplished and scholarly work, and other woodcuts by E. C. Austen Brown, E. York Brunton, Miriam Deane, A. E. Hope-Joseph, John E. Platt, Elinor Postlethwaite, and E. Garrett Rice. The exhibition remains open until October 22.

THE SOCIETY OF ARCHITECTS.

The following have been elected to membership of the Society of Architects:—

FELLOWS TRANSFERRED FROM MEMBERSHIP.

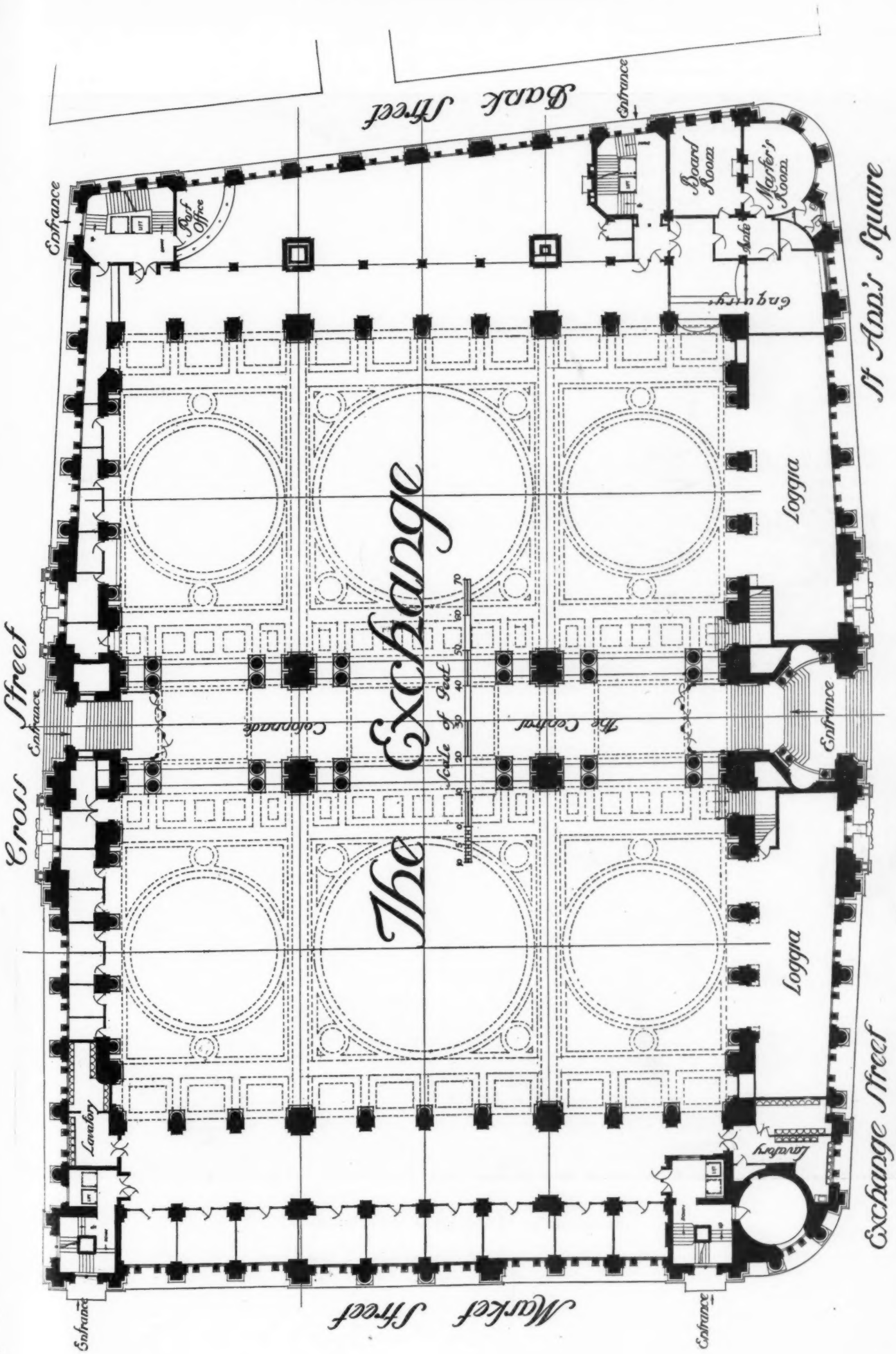
A. G. Ware, Bournemouth.
H. P. Willoughby, London.

RECOMMENDED BY THE SOUTH AFRICAN BRANCH.

G. W. Nicolay, Johannesburg.

MEMBERS.

A. Boulton, Ilford.
H. Collins, Muswell Hill.
E. W. C. Howard, Chelmsford.
J. C. F. James, Southampton.
S. G. Jeeves, London.
F. Juniper, London.
A. A. Ospalak, London.
A. D. Parham, Colombo.
F. I. Tellery, Calcutta.
H. J. P. Thomas, Haverfordwest.
C. H. Willmott, Ealing.



Reconstruction of Manchester Royal Exchange—Plan.

Messrs. Bradshaw Gass & Hope, Architects. (*See p.* 444.)

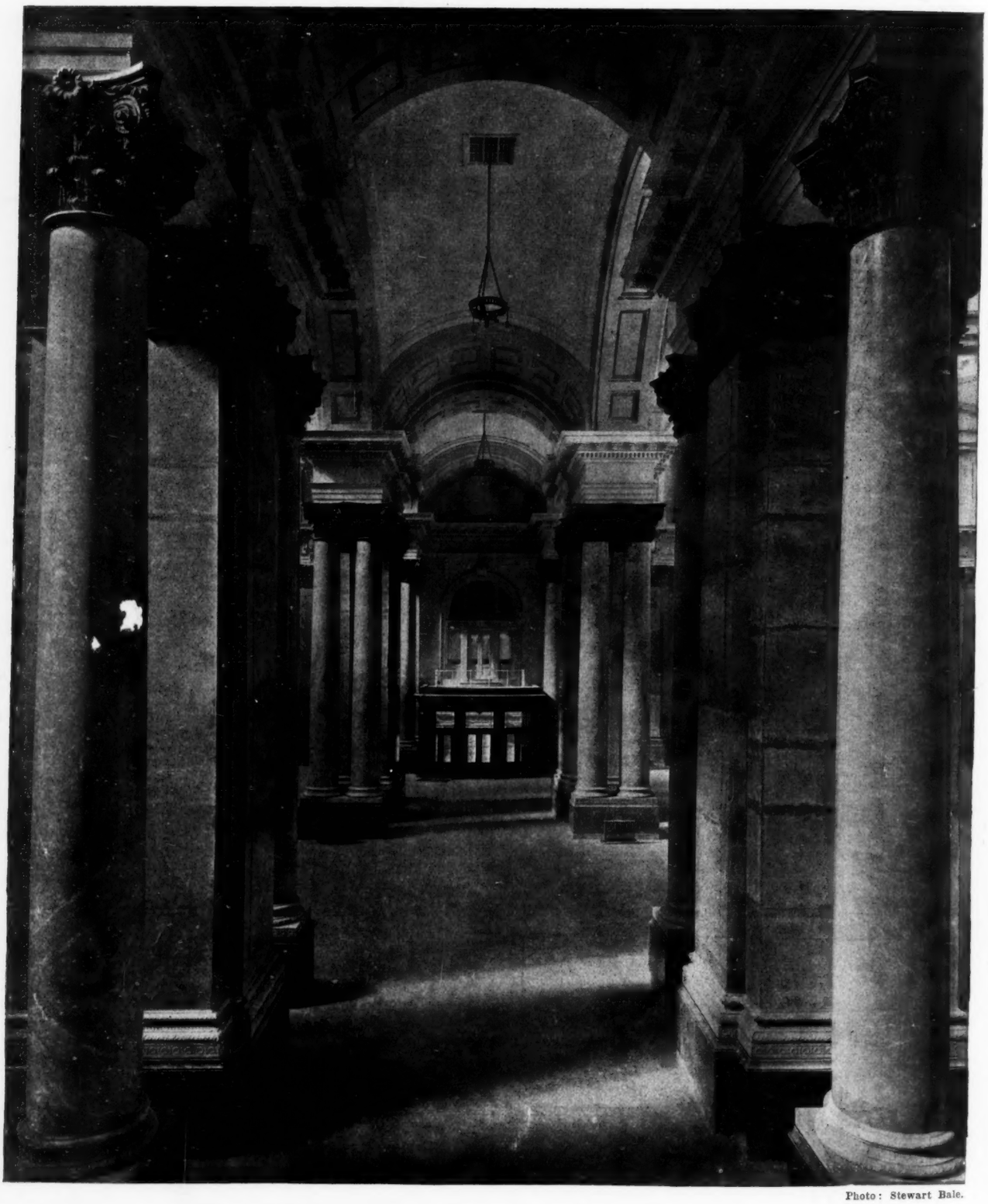
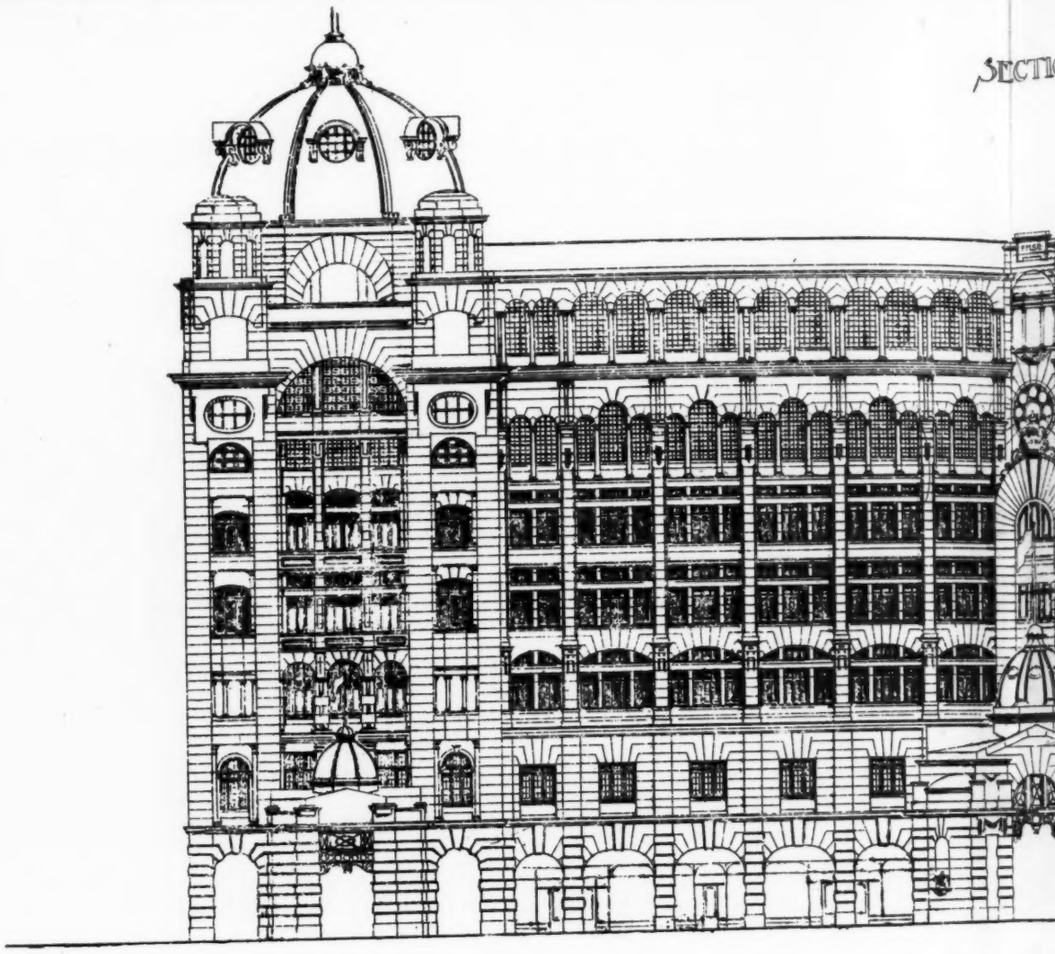


Photo: Stewart Bale.

Reconstruction of Manchester Royal Exchange.

MESSRS. BRADSHAW GASS & HOPE, Architects. (*See p.* 444.)

SECTIO



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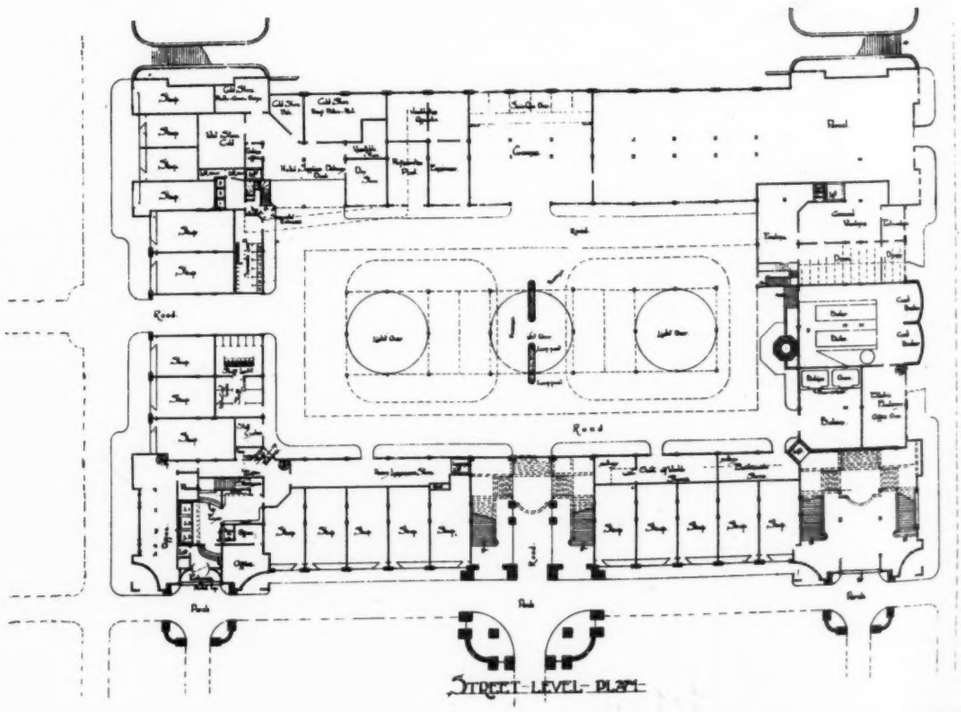
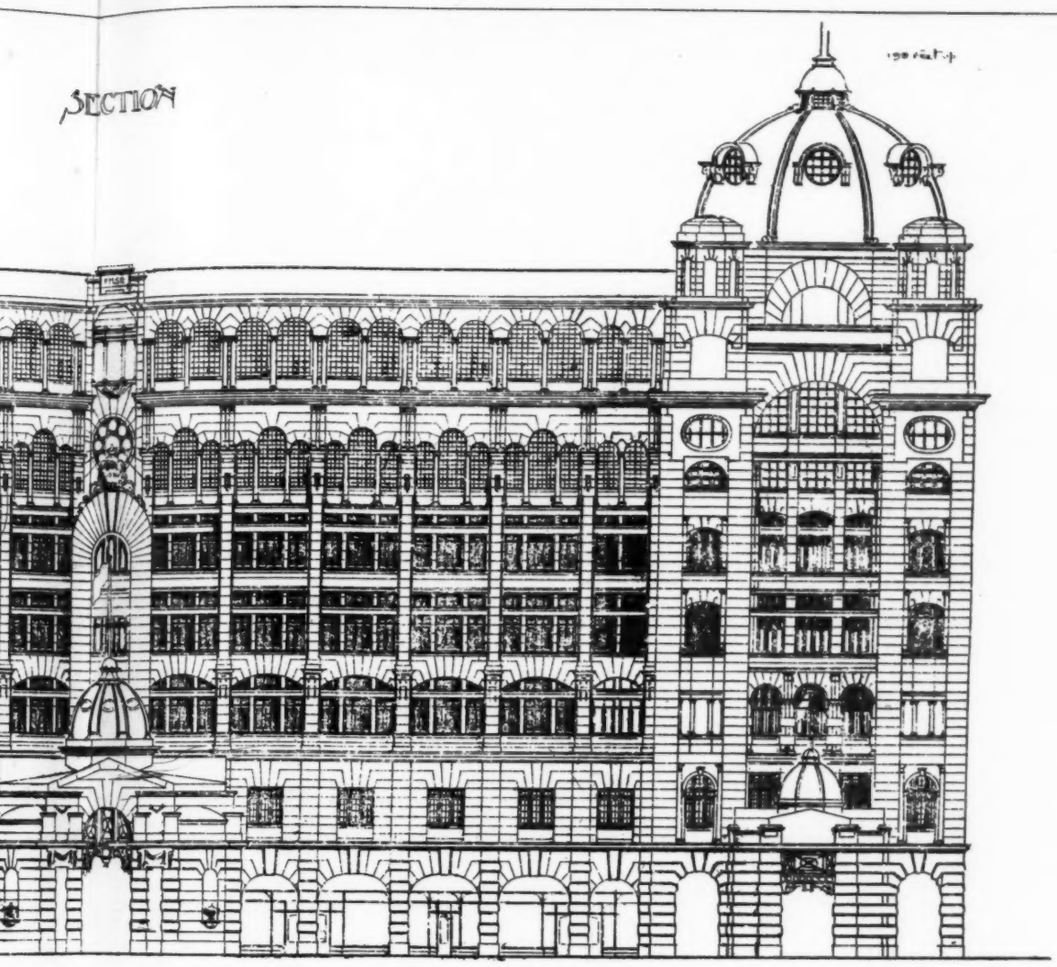


STREET LEVEL PLAN

DESIGN FOR AN HOTEL AT THE TERMI

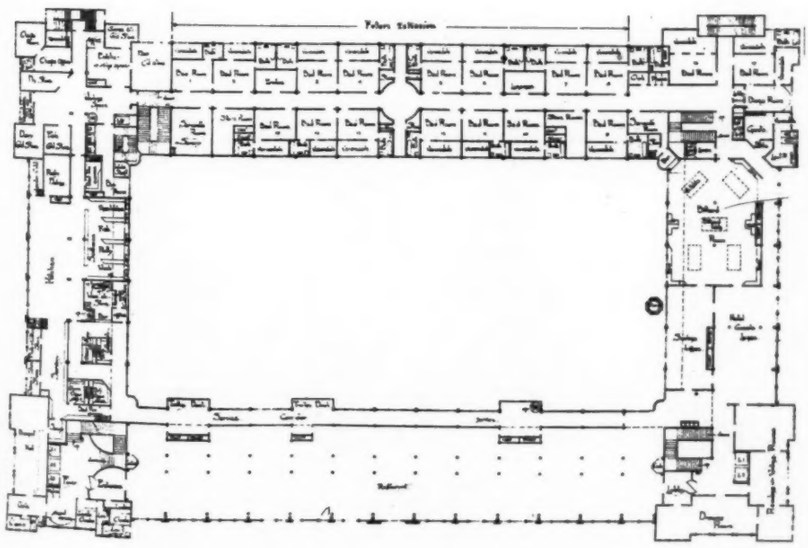
MESSRS. HUXLEY & KIRTEVEL

SECTION



FRONT ELEVATION

SINGAPORE RAILWAY HOTEL



RESTAURANT FLOOR PLAN

AT THE TERMINAL STATION, SINGAPORE.

IXLEY & KASTEVEN, ARCHITECTS.

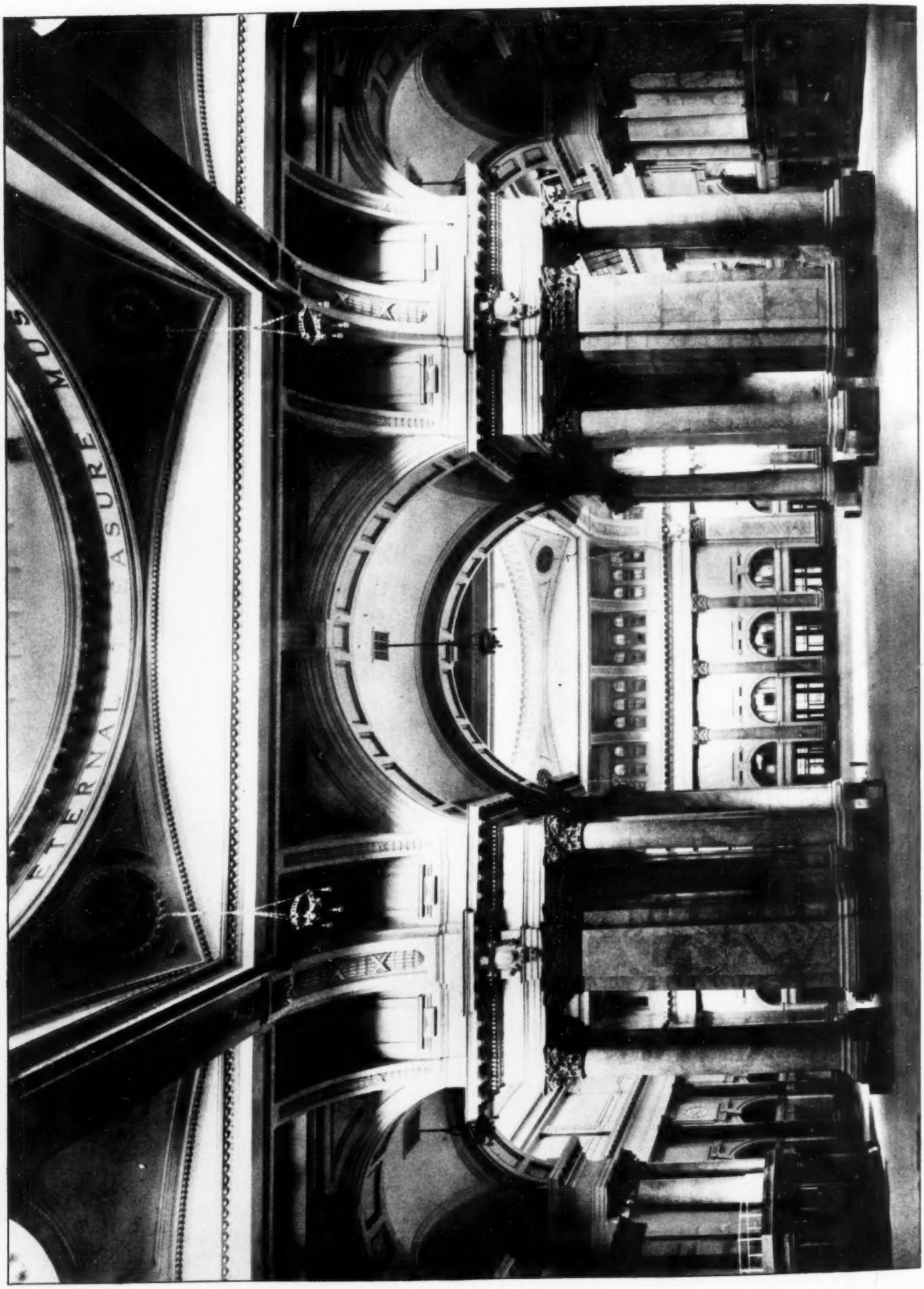


PHOTO : STEWART BALE.

MANCHESTER ROYAL EXCHANGE, AS RECONSTRUCTED.
MESSRS. BRADSHAW GASS & HOPE, ARCHITECTS.

PHOTO : STEWART BALE.

MANCHESTER ROYAL EXCHANGE, AS RECONSTRUCTED.

MESSRS. BRADSHAW GASS & HOPE, ARCHITECTS.

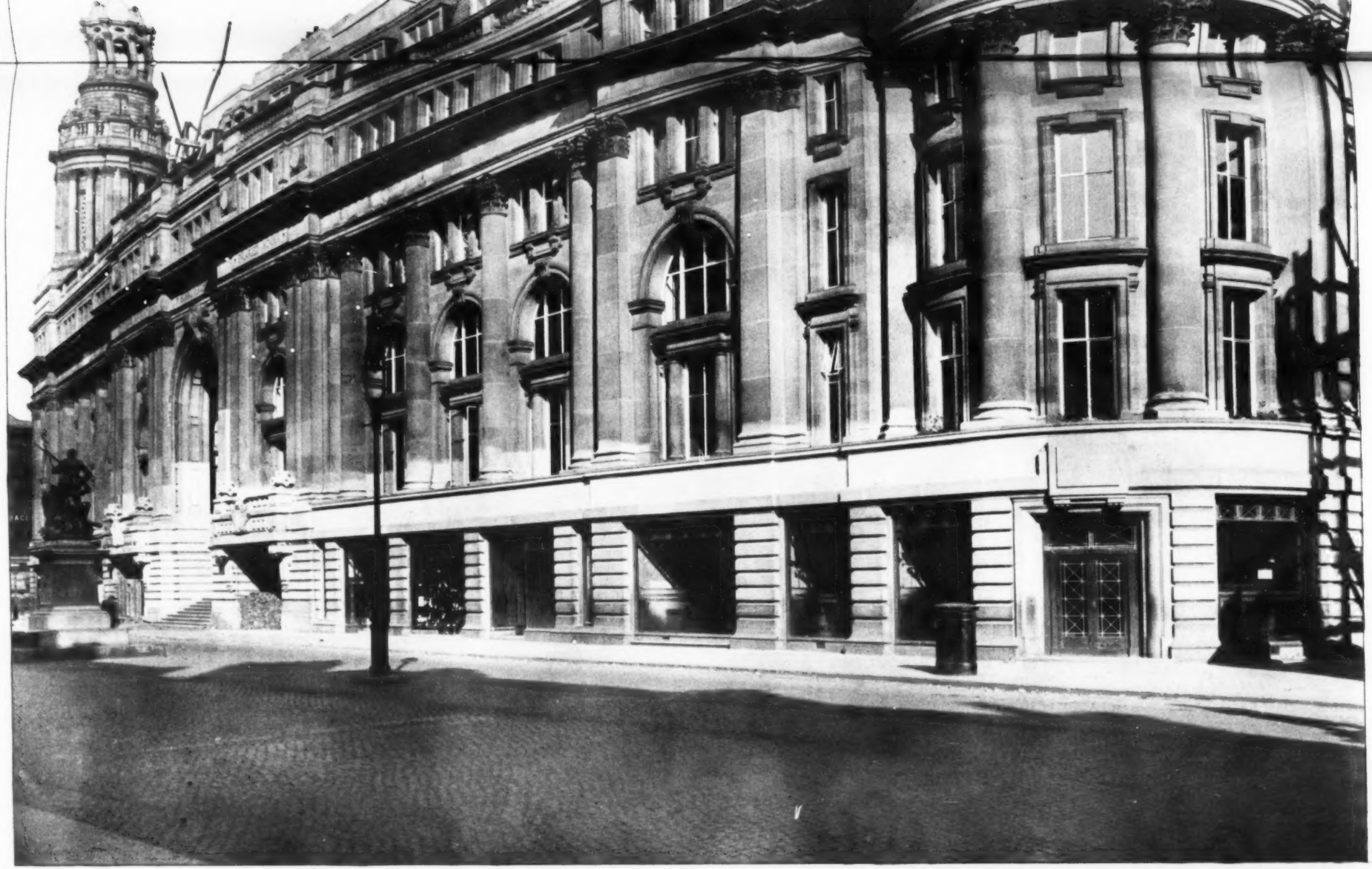
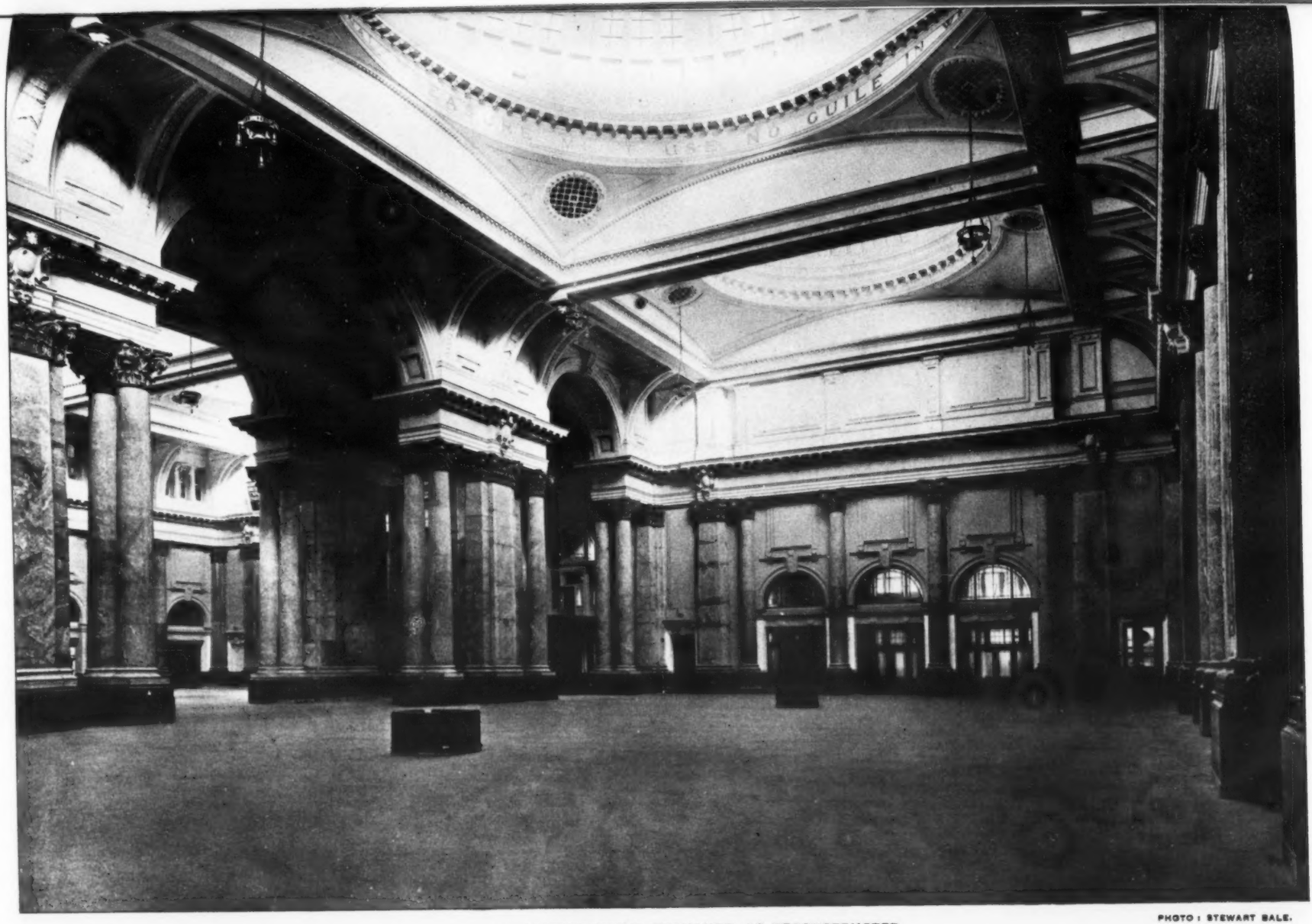


PHOTO: STEWART SALE.

MANCHESTER ROYAL EXCHANGE, AS RECONSTRUCTED.

MESSRS. BRADSHAW GASS & HOPE, ARCHITECTS.



MANCHESTER ROYAL EXCHANGE, AS RECONSTRUCTED.

MESSRS. BRADSHAW GASS & HOPE. ARCHITECTS.

PHOTO : STEWART SALE.

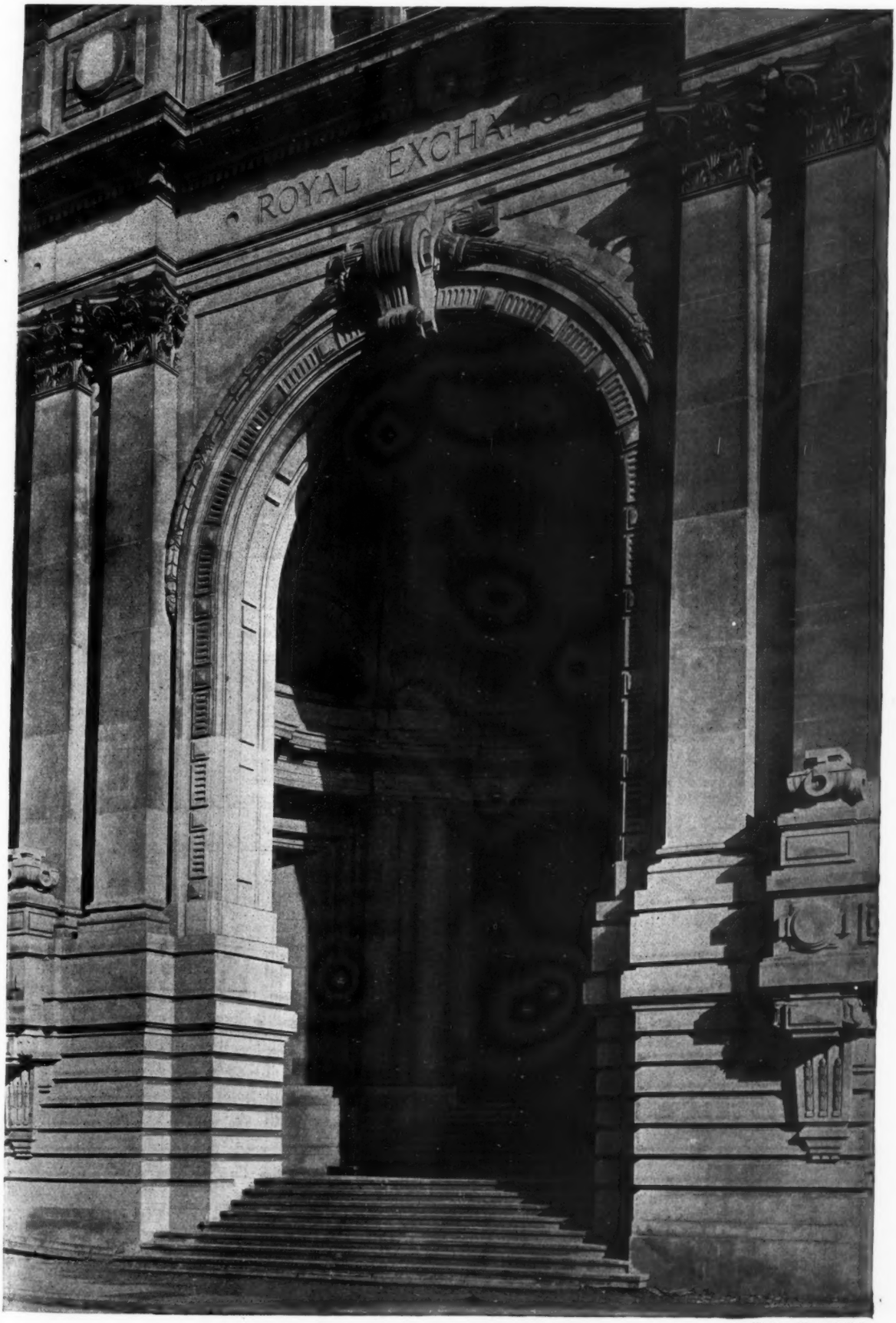
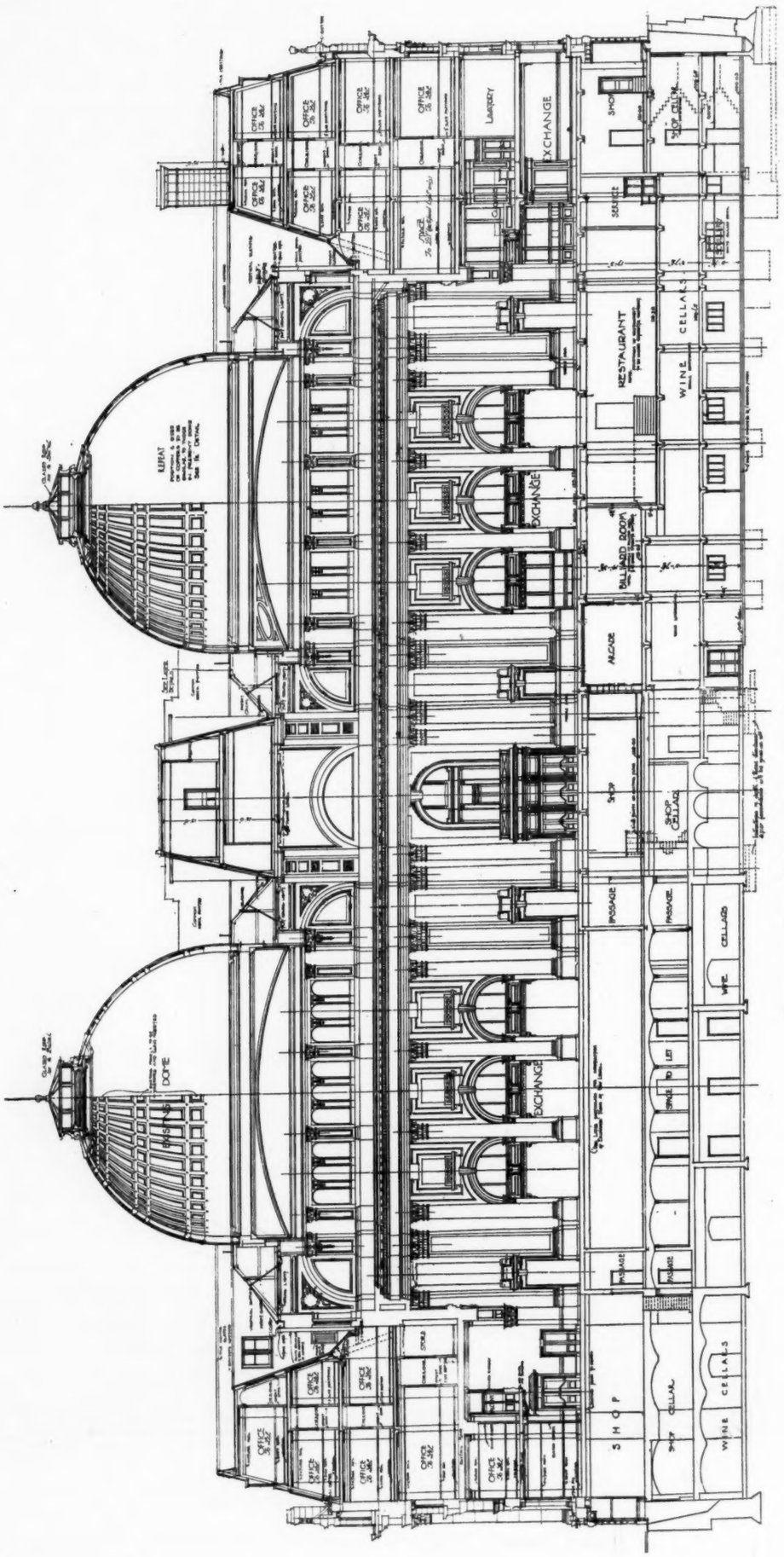


Photo: Stewart Bale.

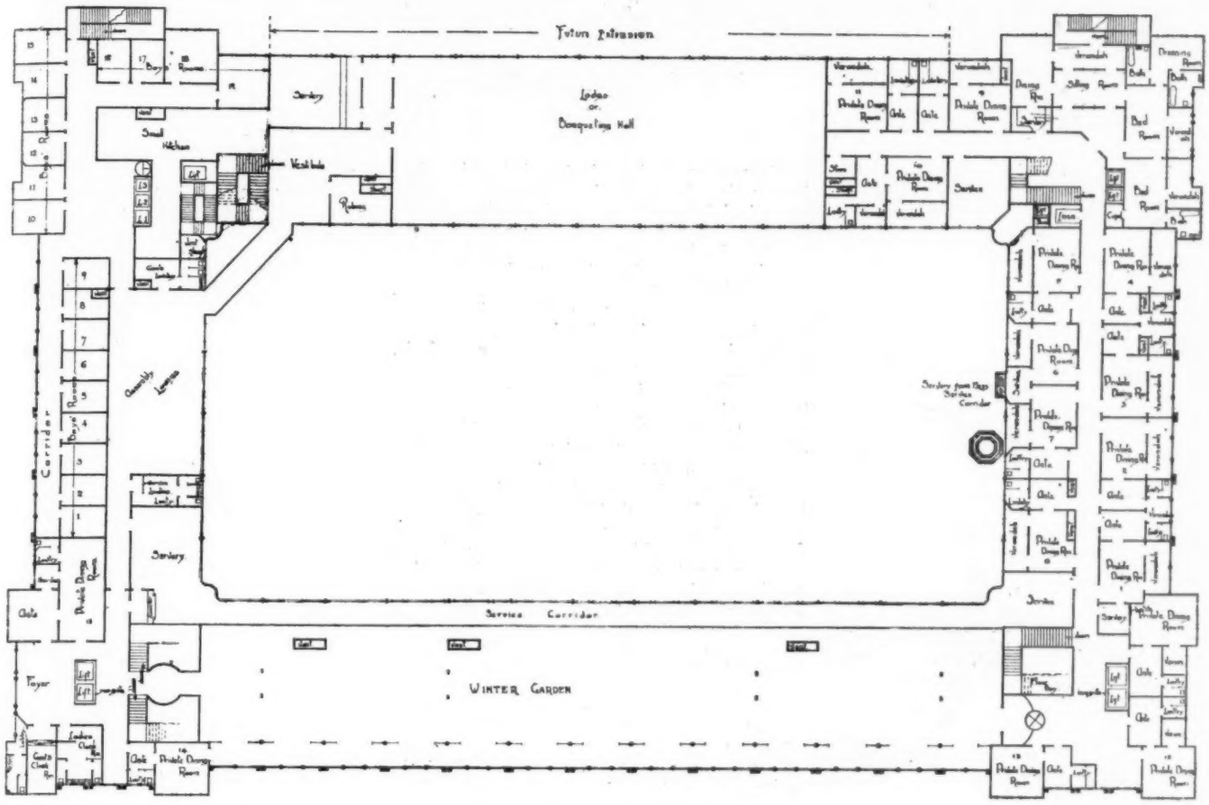
Reconstruction of Manchester Royal Exchange.

MESSRS. BRADSHAW, GASS & HOPE, Architects. (*See p.* 444.)

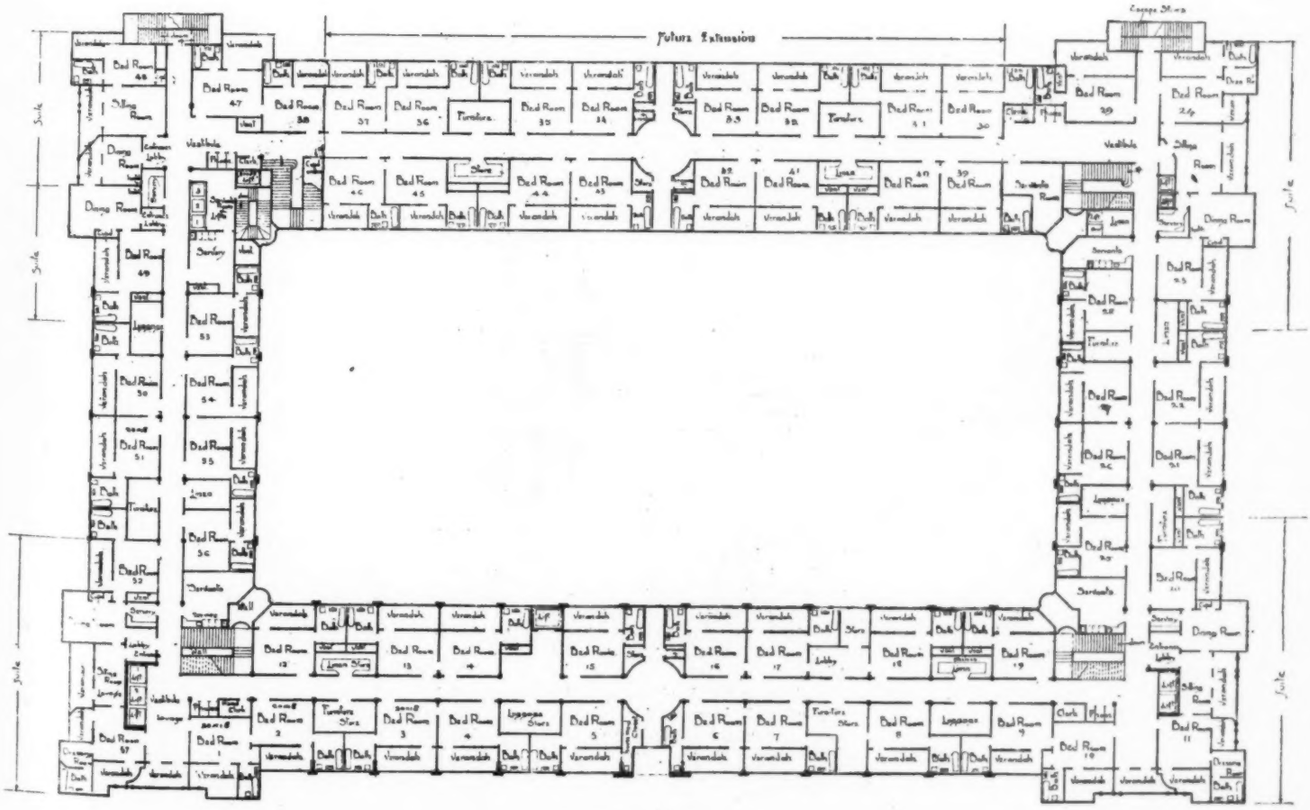


Reconstruction of Manchester Royal Exchange—Section.

MESSRS. BRADSHAW GASS & HOPE, Architects. (*See p.* 444.)



WINTER GARDEN (TOP) FLOOR PLAN.



BEDROOM FLOOR PLAN.

Singapore Railway Hotel. MESSRS. HUXLEY & KESTEVEN, Architects. (*See p.* 444.)

MODERNISM AND DESIGN.—X.

PLANNING, COMPOSITION, AND BLOCK-FORM.

BY W. R. LETHABY.

IN an earlier note I spoke of the "Geometry of Planning," and this seems to me a grammatical kind of subject that could easily be laid out for school instruction. One of the needs of the moment is to find ways of approach

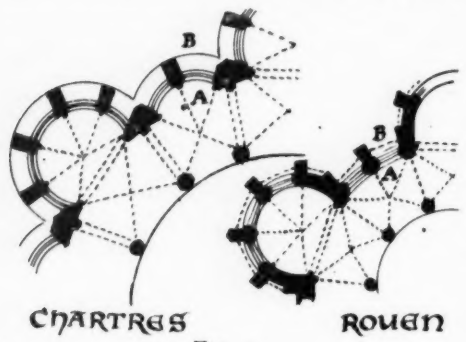


FIG. 1.

to the experimental art of building applicable to the system of the schools, otherwise they quite inevitably gravitate to copying "orders," for teachers *must* find something which they can set new students *to draw*. Then the examinations *must* follow the course of instruction. In due sequence we get the notice in the last number of the R.I.B.A. *Journal*: "Examinations: The following modifications have been made in the Testimonies of Study:—(1) and (2) Two sheets showing the application of one or more of the Orders of Architecture to a building," &c. [(3) to (8) follow]. Now, we have been told for one hundred years that the idea of constructing ornaments and looking on architecture as an "application" is all wrong, but the educational machine by the whirling round of its wheels within wheels once more comes to this. We pity Chinese women for deforming their feet while we maintain big institutions for crushing men's heads. I really am a little disheartened; it just happens, and I know everybody is full of goodwill, but think of men who drove tanks and piloted 'planes coming back to draw "the application of the orders," as required for the examinations. Great diseases spring from small infections, and the word "orders" has been singularly betraying. If we called the things "varieties" or "kinds" in speaking of antiquity and "dummies" in our own days it would make the facts clear, and the

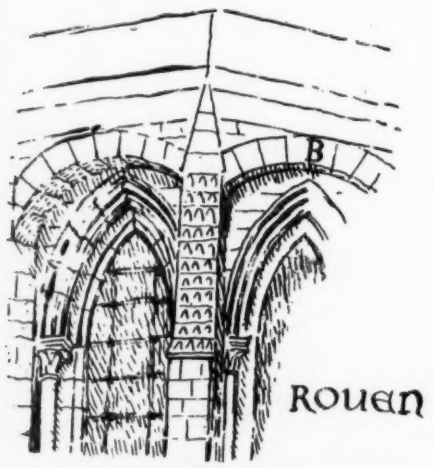


FIG. 2.

R.I.B.A. would hardly ask for drawings showing the application of one or more of the Dummies. When "architecture" is so taught, is it any wonder that our roofs leaked so the other night?

We need methods of instruction which shall be practical from the first day, seek to bring out principles, and open out inventiveness and initiative. A kind of "planning game" would, I think, be interesting, and it might quickly pass into constructive planning, for, of course, a master builder does not see a mere flat pattern, but a structure. "Design" has its proper roots in the experimenting faculty.

The plans of the great French cathedrals, for example, were the result of steady experiment. About a dozen years ago I made a little study of Rouen Cathedral, and on going on to Chartres I found that the apsidal plans of both were closely related. At Chartres chapels of considerable projection alternate with others which are shallow—hardly more than bays of the ambulatory (Fig. 1).

At Rouen the bays between the chapels form part of the aisle, but each has two windows and is covered with a five-celled vault (A), like the intermediate chapel at Chartres. Further, by means of external arches over the windows, a salient angle is given to the exterior of these bays (B) which thus to the exterior look very much like the alternate chapels at Chartres. These external arches at Rouen are flat segments (Fig. 2). They are used in the adjoining chapels, as shown by the dotted line on the plan. Their primary constructive purpose was to push the window proper to the inside so that the stained glass could be seen. They

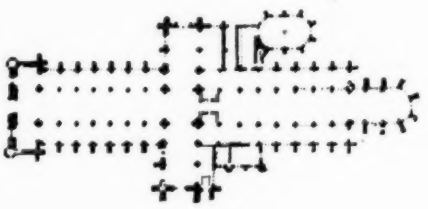


FIG. 3.

are used also in the transepts, the nave, and the west front, over the beautiful early doorways. Viollet-le Duc and, I believe, all subsequent writers have supposed that these doors were parts of the Cathedral burnt in 1200, but these segmental arches tell another story. But I am becoming too historical, and what has been said is sufficient to point the moral that all great things in building art were produced by a tide of development, a chain of living thought, unceasing experiment, vital modernism. At the same time when all was new nothing was specially "original." Building was as natural as baking bread. I give in Fig. 3 a tiny plan of Lichfield Cathedral to recall the wonders which were produced by following what was then a modernist development. The same lesson is everywhere and always to be learnt when we look on honest human building. Ruskin in the "Stones of Venice" learnt it from one of the queen cities of the world; last month I saw much the same thing in a humble Devonshire village; a week ago I had the privilege of looking over some excellent drawings made by an Armenian artist of the wonderful ruined churches of his land.

This sent me back to consult Strzygowski's fine recently issued volumes on the architecture of that remote and tragic country. All is fresh, even strange; yet all is the same—the human mind experimenting with the problems of building. Figs. 4 and 5A are two plans. Fig. 6 shows an ingenious way of supporting a small cupola over a square chamber—a library, for which the wide wall space and lantern light are appropriate. Domes are generally finished on the outside as cones covered, apparently, with cut slabs of stone solid-bedded. The pendentives of the dome of the Cathedral at Ani are most skilfully managed, having a *pair* of intersecting arches across each angle of the square crossing and converting it into a twelve-sided figure (Fig. 7). The capital on Fig. 5 must be a far-descended variety of the Ionic.

From preliminary planning studies I would pass to what may be known of the modern

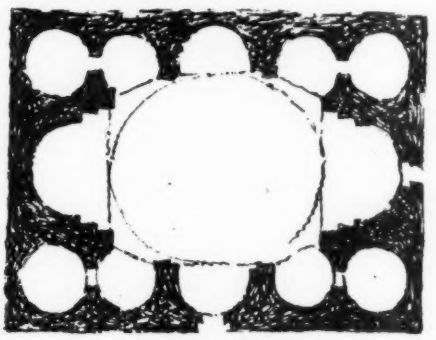


FIG. 4.

French aptitude for packing rooms together in an orderly way. Much of this, as well as theoretical mechanics, could still be done in schools away from the hard facts of actual building, and yet without the danger of putting paper "architecture" in its place. We need a good book on planning; while we must approach building through books, let them be right books.

"Composition" is one of the blessed, almost sacred, words of the schools; indeed, modern "architecture" is half a language (or, say, one-third language, one-third paper, and one-third contract). And yet the word "composition" can only mean something like putting together—a cake or mince-pie is composed, but cooks have not yet come to making perspective drawings to see "how they will look." A good example of composition is laying the breakfast-table—everything is put to hand where it will be wanted, yet all is custom, and yet again, it is governed by principles. There is squaring-out, axial treatment, and symmetry, but they are not mentioned, and beyond all there is room for the spirit of friendliness to appear. And that—if I may venture for just once—is what I want to see in our buildings, instead of the vulgar posturing of the would-be "grand." It has been the method of the writers on "architecture" to apply certain well-sounding words and phrases to the past results of the natural art of building and to talk about those results in relation to those picked words. This has been all very nice and right as part of the art of essay writing, but it is likely to be very confusing (as raising acute self-consciousness on accidental or secondary or irrelevant matters) to those engaged in building. "Composition," we may be told, implies series, symmetry, proportion, balance, rhythm, &c. But why should a thing have series? Must a fish have legs? Has the

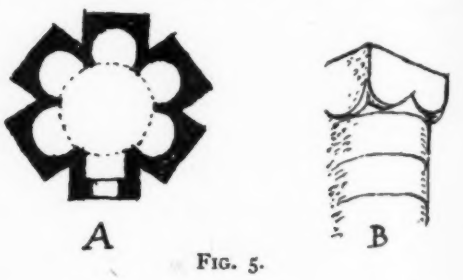


FIG. 5.

Great Pyramid series? Should a crystal sphere be broken to get them, or is it "it"? Again, what is symmetry? It is in the nature of things that where there is force or direction there is an axis around which the effects are distributed.

A tree has a vertical axis of energy with radiating branches and foliage, spreading and falling like a fountain (a tree, indeed, is a fountain of sap). On the other hand, the characteristic aspect of an animal is *not* the symmetrical one. A building made for active service could hardly be planned otherwise than axially. Up to a point symmetry is rational, natural and convenient—our breakfast table we saw was laid with symmetry and balance; up to this point it is a common-sense need (I would say "utility," but that has become a horrid word on the other side, leaving out the spirit!). We are so accustomed to symmetry as a common factor in orderly arrangement that it may be quite natural to carry it further, as in the placing of objects on a mantel shelf. Symmetry thus becomes a sign of volition. There is little or nothing in it more than this. I record here an exercise in axis I made about thirty years ago (Fig. 8); such symmetry would not, perhaps, be without utility. (I would now withdraw the sham-Renaissance of the drawing.)

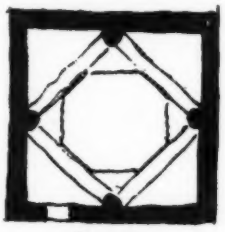


FIG. 6.

Rhythm is a very pretty word taken over from music; but rhythm is a governing condition of music, whereas weight, stress, and balance are the governing conditions of the art of building. We could just as well write charming essays on building in words borrowed from light as from sound—chapters on luminosity, intensity, penetration, radiation, and so on, would sound well, but such writing is likely to be merely a dazzle of purple. These analogies, indeed, are only true æsthetically so far as they are true otherwise. There is nothing to be got out of them further. The rhythm of the lines of a ship are obtained functionally.

The designing architect has to fit his forms to the facts as perfectly as a glove fits the hand. It is this fitting which gives the beauty, although you may call it rhythm, &c., afterwards. So far as these "art words" may be translated back into sound sense we need not object to them, but directly they are accepted as covering mysteries they set up mental disease. Then there is another difficult consideration. Even the good words fail of their virtue in inappropriate contexts. It has been said that variety is a necessary element in fine architecture (and I agree). But the "artistic beauty" of variety depends largely on the fact that it is more natural in masterly workmanship to vary as you go than to repeat accurately. I am told that women carpet-weavers in the East hardly understand the idea—"I prefer that one, do another *like that*." In a row of thirteenth-century Purbeck marble caps I was looking at the other day, the height was the only fixed element—the artist mason did the rest on the banker as confidently as a cook makes dumplings. In our most correct up-to-date sham-mediæval "architecture" we anxiously design such accidents, thus making what was the light-hearted joy of the old masters another heavy burden on the executant artists of to-day. It is not words, but things and life which matter.

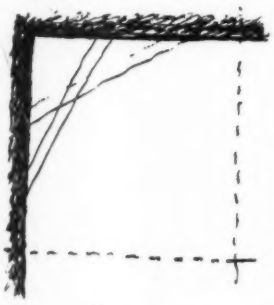


FIG. 7.

A sentence must be said, too, on proportion. Take any made object which (in Mr. Clive Bell's phrase) has "significant form"—a fiddle, a ship, a carriage, a crane, a bridge, an engine; these when they have been developed according to their own proper natures and laws have "proportions," but it would be a crude impertinence to treat them by the canons of "dynamic symmetry." The other day I saw a new car—a low, long, rakish, wicked-looking craft, of bright metal; its geometry of curved surfaces was most complex and refined and, it seemed to me, exquisitely "proportioned." Yet its form had never been corrected by triangulation, and I see that I should not care

FIG. 8.

the least for "proportions" that had been obtained by system. It is a curious sign of the times that we allow the "scientific" people to feel their way to the lines of a car by instinct while we want to patent a method of producing art by rules. Triangulation must be strangulation. True proportion is ever the result of fitting the function. (For a careful examination of Mr. Jay Hambidge's theories in regard to the proportion of Greek vases, see the *American Journal of Archæology*, April, 1921.)

Block-form is the total result, the complete envelope of a building. In a modern French review I find some interesting remarks made under the title "The Engineer Architect," one of *Trois rappels à MM. les architectes* (signed Le Corbusier-Saguier): "Architecture has nothing to do with styles. Louis XV, XVI, XIV or Gothic are like a feather in a woman's hat, sometimes pretty but not always even that. Architecture is more serious and deals with brutal facts, it is manifested in volume and surface. Cubes, cones, spheres, cylinders, pyramids are the primary forms which light reveals. Modern architects have lost the sense of the primary elements, but their task is to deal with the surfaces of masses without destroying them; the volume must maintain its impressiveness although divided, according to requirements. Guided simply by imperative conditions engineers have shown the way and given back to our eyes the joys of geometry. If the volumes are not degraded we receive a satisfying sense of order; when, further, the walls, floors and vaults are adjusted according to reasons which are comprehensible we attain architecture. Great architecture is something more than construction; we, however, are not in a period of architecture but in a period of construction. We shall only rediscover verities when fresh foundations have been laid. For instance, under modern town conditions it is obvious that roofs should be flat terraces—it is plainly ridiculous that the greater part of the area of a town should be reserved for the *tête à-tête* of slates and tiles. . . . Follow American engineers, but flee from American architects." Some of this on mass is at least suggestive if not convincing. On the whole we shall probably agree that large simple forms are impressive, but it is the mission of a work of architecture *to do its duty*, not to impress. Architecture without "quotes" is an art of service. So far as possible, then, simple mass forms are best.

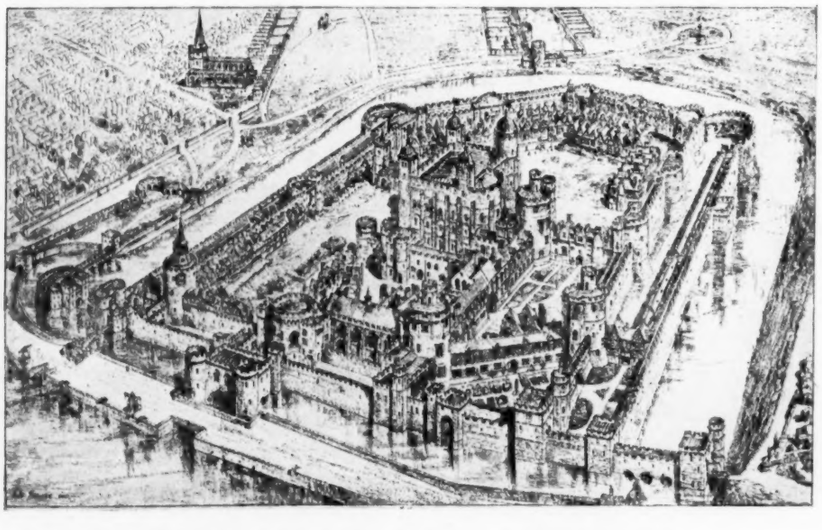
Speaking in a large way of the "plan," the writer whom I have quoted says: "The whole structure is developed according to a scheme written on the ground—the plan. The plan records the moment of decision and registers the essence of the sensation; it requires the most active imagination, the severest discipline. The sense of plan has been lost for a hundred years, but modern scientific procedure poses afresh the problem of the plan." This, too, is pretty and worth quoting, but a building—a *building*, is more than plan. The sense of plan is much—the sense of mass is *much*, but the sense of building is more and covers them all.

As an example of what may be attained by the building approach to design, a large number of the cottages erected under housing schemes may be mentioned with high praise. I have seen many from trains which have delighted me. Some excellent factories have also been built, fearless yet tidy. If we can do these, why not more? As an instance of block-form I might have mentioned the Albert Hall, which, I suppose, is our best recent "monumental" work. May I also venture to speak with admiration of the building at the bottom of Kingsway with the flat octagonal roof at the angle? Granted things as they are, it is surely competent and restrained. I did refer to it two or three years ago, but may have mistaken the name. I should like also to pay my respects to the Insurance Office on the north side of Euston-road as a masterly and inventive work. Parts of the interior of the new wing at the British Museum also go far beyond the ordering of orders (altogether it *is* rather "columnar"!). The treatment of marble and the coloured ceiling of the mid-landing of the staircase deserve close attention. And then we have had the life's work of Philip Webb. The way is plain before us through building and the best modern experiments, if we would only drop the dummies and go forward instead of for ever beginning again to go nowhere.

It is difficult to be quite definite except in some short statement. I should like, in the future and as soon as might be, to put practice in the place of paper, the works in the place of the schools, experiment in the place of "style," and building in place of "architecture." For the present, I perceive there is a demand for advertisement "architecture," and for this a fat commercial imitation of "Renaissance" may be appropriate enough. Granting so much, however, I do not see why all the building arts of the country should be chained to such a chariot. So far as may be then, so far as the machine allows, follow hope and reality; at least keep a free mind, we must not allow our inner thought to be squeezed out of us by juggernaut, or tricked from us by tinkling phrases.

Sir John Soane's Museum.

The interesting house and art collection of Sir John Soane, at 13, Lincoln's Inn Fields, W.C., is to be open free on Thursdays and Fridays until the end of October, from 10.30 a.m. to 5 p.m., and during the month of November from 10.30 a.m. to 4 p.m.



The Tower of London in the Time of Queen Elizabeth.
From a Drawing by the late H. W. Brewer.

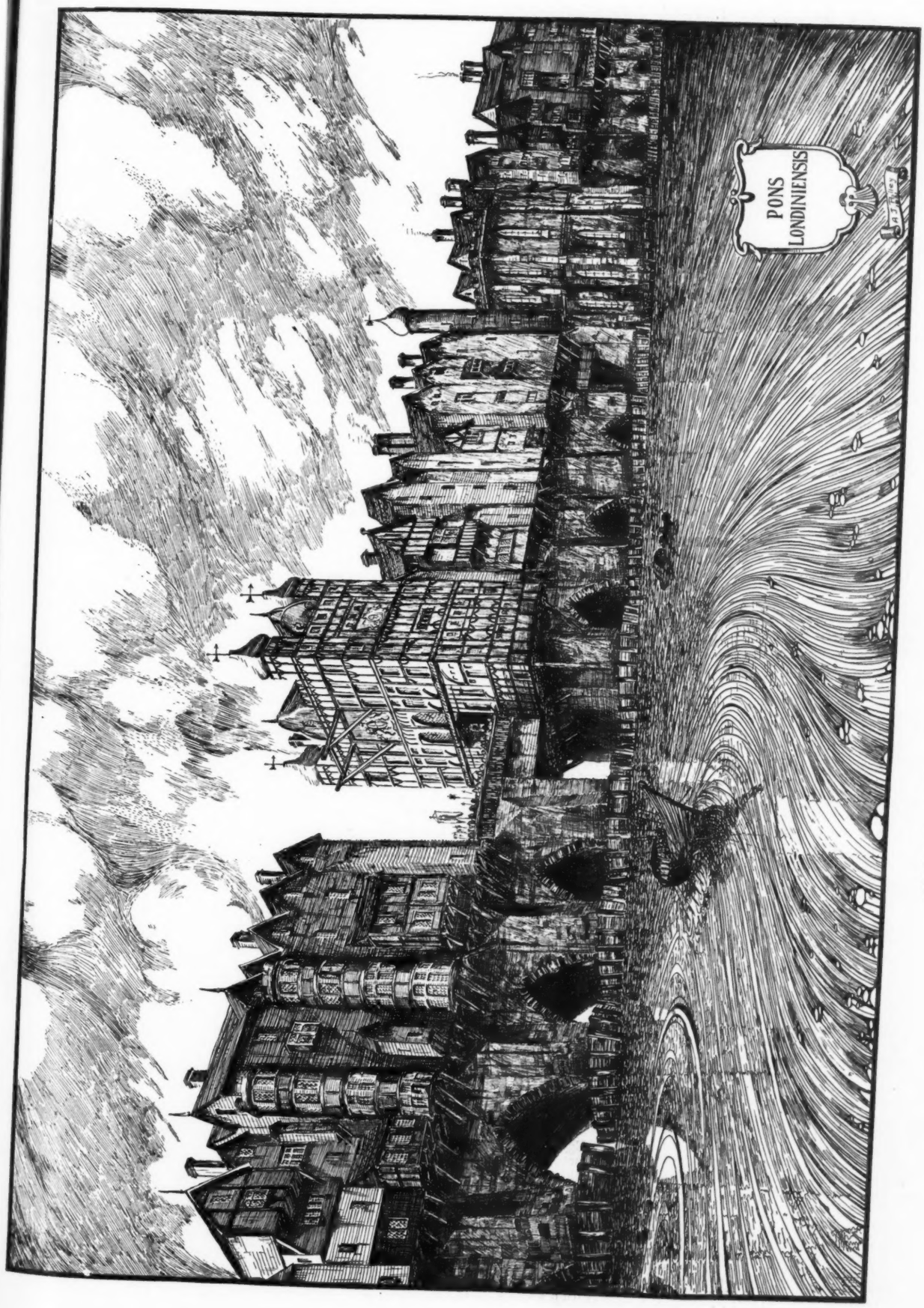
XVIth-CENTURY LONDON.

In connection with the Ideal Homes Exhibition at the Kelvin Hall, Glasgow, a lecture was given last week by Mr. Herbert A. Cox, F.C.A., entitled "London in the Sixteenth Century." The chair was occupied by Bailie W. B. Smith, who, in introducing the lecturer, said they were indebted to the proprietors of *The Builder*, of which Mr. Cox is one of the Managing Directors, for the lecture.

One of the first illustrations shown on the screen was that of the Tower of London in the time of Queen Elizabeth, containing the Royal Palace. [A reproduction of this drawing, by the late H. W. Brewer, is given on this page.] The lecturer said admission to the inner ward of the stronghold was then, as now, through the Garden Tower, afterwards called the Bloody Tower, and approach to the Palace had then to be made beside a wall leading towards the Keep. Close to the latter might be seen in the illustration the gateway called Cold Harbour, which gave admittance to the court of the Palace. To the right of the gateway and in front of the Keep was the Jewel House. On the opposite side of the courtyard was the Great Hall, erected by Henry III. On the right-hand side of the court could be seen a series of buildings called the Queen's Lodgings, and an archway could be noticed giving access to the second court, or Privy Court, of the Palace. This court formed an irregular quadrangle with a tower at each corner. The buildings on the north side were called the Wardrobe Tower, close to the Keep (shown in the drawing as circular in plan), a small portion of which might be seen to-day, and the Broad-arrow Tower (semi-circular in plan), which still existed. Between these was a range or buildings called The Wardrobe. The inner wall connected the Broad-arrow Tower with the Salt Tower, which was circular in plan, and there was a gallery or row of buildings within the wall between them. The Salt Tower was the only existing tower which might possibly be regarded as a portion of the old Palace. The inner wall was carried straight on to the Well Tower, where it joined the outer wall. A building called the Queen's Gallery went in an oblique direction from the Salt Tower to the Lanthorn Tower, which still existed. Another building, called the King's Gallery, extended from the Lanthorn Tower to the outer wall, which, with the walls and buildings previously mentioned, enclosed a triangular court planted as a garden, called the Privy Garden. In order to make up for the absence of the inner wall, in this part of the Palace the outer wall was defended by two extra towers, the Cradle Tower and another.

The illustration of Cheapside showed houses, mostly of wood, in which the merchants lived above their places of business. The lecturer pointed out the public fountains in Cheapside, and remarked on the dependence of the inhabitants upon such a water supply. An illustration of Old London Bridge showed how a water supply had been obtained by a Dutchman, who erected a water-wheel under the first archway of the bridge. This gave a partial supply to the town, but it proved useless at the time of the Fire because it was one of the first objects to be consumed. The houses on the Bridge suffered constantly from fire and tempest, and probably their only redeeming feature was that they were picturesque. [An illustration of the Bridge, from a drawing by Mr. A. J. Polley, given on the next page, shows as a prominent feature Nonesuch House, which was erected towards the end of the sixteenth century and probably formed the residence of the Lord Mayor.] Another view by Brewer, "Lights and Shadows of a Bygone Age," showed the homes of the people sheltering under a frowning fortress, not unlike the Castle of Edinburgh.

The lecturer mentioned that ten of Brewer's drawings of Old London, with descriptive notes on each drawing, would shortly be published in book form by *The Builder*, under the title of "Old London Illustrated." The model of Old London Bridge shown by the lecturer is exhibited on the stand of *The Builder* (No. 19, Avenue A) at the Exhibition, the closing date for which (October 8) may be extended for one week.



Old London Bridge. From a drawing by MR. A. J. POLLEY.

EGYPTIAN ARCHITECTURE:

ITS ORIGIN, EVOLUTION, AND CONSTRUCTION.

By Frank H. Heaven, A.R.I.B.A.

(*Concluded from p.* 410.)

Temples.

In Egypt from the earliest times it had been customary to bury gifts with the dead and also to make offerings at their tombs. To enable this to be carried out in a manner commensurate with the high esteem in which the kings or Pharaohs were held the service of the royal tomb was regularly endowed to support a college of priests, and temples with subsidiary buildings were erected and attached to each Pyramid. Other temples dedicated to certain of their gods were also erected throughout the land, each the earthly habitation of one or more gods. The erection of these temples provided ample scope for architectural ability in producing buildings conducive to the mysterious rites of their religion and yet of a scale consistent with the size of other architectural works of the various periods. They called for great ingenuity and skill in planning, erection, and decoration to preserve their utility of purpose and durability, and in providing ample space for the recording of history in hieroglyphic. That they achieved their desire cannot be disputed. The splendid examples of the industry of these prolific builders are to be seen on all hands along the banks of the Nile. These Egyptian temples have great historical value, because on every available piece of wall space or surface, including the shafts of columns, were recorded in hieroglyphic outstanding deeds of the kings and their people, common daily avocations, and events of national importance. The meaning of all this descriptive decoration was unintelligible until the discovery of the "Rosetta" stone (now in the British Museum) near Rosetta in 1798. On this stone was graven in the Egyptian hieroglyphic and demotic forms of writing, and also in Greek, a decree of the year B.C. 195. With this key, scholars succeeded in unlocking the secret of the Egyptian inscriptions.

The temple proper was developed under the "Old Kingdom," and remains belonging to this period have been discovered at Abousir, and also of others belonging to the Eleventh Dynasty at Thebes and Deir-el-Bahu, but those better known belong to the Eighteenth Dynasty. Approach to the outer gates was made along broad avenues flanked on either side by beautiful statues and terminated by pairs of obelisks placed immediately before the grand entrance between two mighty pylons at either side. Within, the walls were covered by relief sculptures and paintings, suggestive of the relation between the earthly habitation of the deity and the spiritual universe to which it belonged.

The temple, says Maspero (1907), was built in the image of the earth such as the Egyptians imagined it to be (a sort of flat slab more long than wide), and the sky was a ceiling or vault supported by four great pillars. The pavement represented the earth and the four angles the pillars, whilst the ceiling, sometimes vaulted but more often flat, corresponded to the sky. Throughout, the scheme of decoration was most appropriate—from the pavement grew vegetation, and water plants emerged from water; the herbs and beasts represented were often those of foreign lands seen or visited by the kings or others having authority over the works; the ceiling, painted dark blue, was strewn with five-pointed stars; the sun and moon were seen escorted by constellations, and the months and days. The subjects for such ornamentation were restricted to a small number, and were always the same.

Much thought and careful consideration to principle and detail is apparent in the design of these buildings. Nothing was left to chance, new features were subjected to the tests of science before acceptance, and old features were recast in the light of improved knowledge. A veneration for the past was not allowed to cloud the vision of the present. Progress and evolution were the principia of these mighty architects

Karnak.—During the "Theban Period" (Thothmes III, B.C. 1600) the most important work was the building of the great temple at Karnak, around which were grouped several smaller temples. This, the grand temple of Ammon, was the work of successive kings and generations. It was 1,200 ft. long. Begun in B.C. 2400 by Usertesen I, it was enlarged first by Thothmes I (B.C. 1633–1600) by the addition of a courtyard surrounded by a colonnade of Osirid columns, and later by Thothmes III (B.C. 1600), who constructed an excellently-designed columnar hall 143 ft. by 53 ft.; but the great glory is the Hypostyle Hall commenced by Seti I (B.C. 1350) and completed on his death by Rameses II (B.C. 1333–1300), the most imposing structure in the world's history. It measures 340 ft. by 170 ft., and its roof is carried by 134 columns planned in 16 rows; the shafts of the two centre rows were more than 60 ft. high and 12 ft. in diameter. These two rows were higher than those on either side, and it is assumed that light was admitted by a clerestory above (*see* Fig. VII). The later columns were mostly of sandstone built up in drums, not monoliths of red granite as were those of the earlier periods. A similar form of column was used in this temple to that in the rock-hewn tomb at Beni Hassan, but as it did not appear to find great favour it was discarded by later builders.

Thebes.—On the opposite bank of the Nile were other groups of temples, including the tomb-temple of Amenhotep III and the Ramessium, entirely built by the great Rameses The Ramessium has a typical temple plan. At the front are the two pylons with the main entrance between them and giving access to a large forecourt flanked by colonnades which in turn led to an inner court, smaller than the first, but more richly decorated with statuary. Both courts were open to the sky. Beyond these was the Hypostyle Hall. This Hall is a feature of Egyptian temple architecture. In the centre were two rows of columns supporting the higher portion of the roof, and on either side were ranges of smaller columns. Light was admitted through perforated stone panels fixed in the wall between the two roofs, typical of the clerestory developed in Christian architecture (*see* Fig. VII). Beyond this hall was a series of smaller chambers set apart for the use of those officiating in the service of the temple. The columns were highly coloured, and the capitals introduced were varied to suit the positions in which they were placed, with due regard to the lighting; those of the highest columns were bell-shape and those of the side columns were bud-shape—wide at the base and tapering upwards, which allowed the decoration, lighted from above, to be seen to best advantage (*see* Figs. V and VII).

Edfou.—Other imposing temples of this period were erected at Denderah and Edfou, the latter being the most perfectly preserved in Egypt. It was built between B.C. 237 and 212 by Ptolemy III and IV, and dedicated to the worship of the Hawk, sculptured emblems of this bird being very prominent (*see* Fig. VI).

Palaces and Larger Houses.

Egyptian palaces were much lighter in structure than the temples, being often built in brick and wood. Their courts, ponds, and dependent buildings, &c., were enclosed within strong walls. The ceilings, walls, plaster floors, &c., were all gaily painted with patterns or scenes. The houses had from two to three stories of rooms with windows of quite modern form, plain, mullioned, or with transomes. The larger houses had a court surrounded by columns with a water tank in the middle.

Common Buildings.

The first dwellings were probably round huts made of wattles and mud and covered with a cone of reeds, the materials most ready to hand being reeds, river mud, and palm branches. Such huts as these seem to be represented in some early relief carvings. The earliest structure actually discovered is, however, a predynastic tomb found in the sands at Hierraconopolis, and is nearly right-angled. Modern peoples take squareness very much for granted as being a self-evident form, but really the discovery of the square was a great step in geometry. It is reasonable to suppose that square rooms were built to fit square mats which were woven from rushes. The tomb referred to above and many other early dynastic tombs found were sunk in pits, and the walls leaned outwards against the sand. Later it became customary to build above ground, as almost solid masses of crude sun-dried bricks developed from mud building (*see* Fig. VIII). The interior faces of the walls leaned outwards like modern retaining walls, and this principle was later perpetuated in stone as pylons and became a typical feature of Egyptian temple architecture. Early representations showed these early dwellings to have centre posts, which are the prototypes of later stone columns, having swelling projections at the top like capitals.

The walls and roof were of bundles of reeds bound together in rolls and daubed over with clay, and the centre post was of wood shaped into a baluster form. This tent pole was the first column; it was circular, and the top or capital was not separate but only a projection to prevent the horizontal reeds from slipping. The walls of these early buildings were recessed in vertical channels, a practice constant from the First to the Fifth or Sixth Dynasties. It also occurred in the crude brick walls, but evidently arose from reeds or timbers. Later they were copied into stone on the exterior, and also on the interior of tombs and chambers. Originally it is suggested that they arose in constructing the walls in a series of posts and panels of rushes, each post and panel being separately made but later bound together at head and foot and possibly at intermediate distances with some form of binder, undoubtedly reeds. One reason why this feature was retained and copied into stone is that it lent itself to deception. A number of false doors were thus indicated, and this was of great value in tombs where every endeavour was made to discourage the curious from gaining access to the inner chamber containing the mummy. Prehistoric buildings were whitened and painted. Later, the exteriors of crude brick erections were plastered and coloured in bands.

Orientation.

In laying out or placing their monuments of architecture, orientation —*i.e.*, the placing of the building in relation to the heavenly canopy—was duly considered by the Egyptians. At Meydum the Pyramid corresponds to the four cardinal points or aspects, and so do the three Pyramids at Gizeh, and their temples were planned on an axial line pointing to the rising sun at some special date. The Egyptians assumed that the heavens were stable, and that any building placed in fixed relation thereto acquired a magical stability and divine approbation.

Proportion.

A basis of proportion also entered into all the works of the Egyptians. Accuracy of mathematical relationship was an essential principle in setting out their works. A big standard of measure was adopted so as to avoid errors—all parts were of a known dimension and there were no accidental quantities. Simplicity of measurement and an elimination of fractional parts were their acme of perfection.

The Greeks held similar ideas of proportion, based on a belief that to be perfect an object must have relative dimensions of simple measurement which avoids fractional parts. In the Old Testament we find other examples of a similar mode of thought described for the erection of the Tabernacle and Ezekiel's temple. Indian craftsmen also worked to the same tradition. All this accuracy was due to the high ideal set before the builders, and also to a desire to create permanent structures.

Decoration.

COLUMNS.—Of the important features introduced into architecture by the Egyptians the use of the column in their temples was one of the greatest. In constant use in the interiors, it was varied in design as its position commanded. Without a doubt its introduction was the natural outcome of the planning and roofing over of vast enclosed spaces to accommodate large numbers of worshippers.

Its introduction as an architectural feature had an important influence upon the later architecture of Egypt, and also, indirectly, upon that of Europe, due to the development of the feature by the Greeks and the evolution by them of the orders of architecture. It is, however, of interest to note that the particular type of rudimentary column used by the Egyptians in the rock-hewn tomb at Beni Hassan (*see* Fig. III), and the great temple of Ammon at Karnak, but afterwards discarded by them, was taken by the Greeks as the prototype from which to evolve their more graceful and ornate columns.

Of the columns many types are found which later became typical of Egyptian architecture, viz. :—

(1) The papyrus sceptre, a bulgy shaft of swelling profile with a spreading capital (*see* Figs. VI and VII).

(2) The lotus, being groups of lotus buds around a shaft, or bunches of reeds bound together round the neck of a flower (*see* Figs. V and VII).

(3) The palm leaf, a circular shaft with palm leaves attached by rope binding at the neck (*see* Fig. VI).

Early stone columns were monoliths of great size, but later the shafts were built up in drums and the capital divided from the shaft. Sturdy and massive, they rarely exceeded 6 diameters high, often reduced in diameter near the base, and the use of an abacus of smaller dimensions than the shaft itself gave it a bulky and ungainly appearance (*see* Fig. V). The evolution of the column ceased with the Fourth Dynasty, for at that time Egyptian architecture had received its distinctive style and was fully formed. Few discoveries were made during the thousands of years which followed, as practically all the conventional forms had been perfected.

MOULDINGS.—The earliest moulding is a "roll" (*see* Figs. VI and VII) used horizontally and vertically at angles. Crossed by lines like binding cords, it is probably derived from the stiffeners and angle pieces used in framing up the reed walls. During the Fourth Dynasty the typical Egyptian "gorge" mould, or cornice, appeared. It is the first moulded cornice, probably derived from drooping palm branches or reeds (*see* Figs. VI and VII).

Construction.

In construction the Egyptians were equally as great masters as in design. The use of forms of construction common to modern practice were introduced and continually used by them, of which the following are a few of the chief :—

Vaults and arches were well-known features from the earliest of the dynastic times, and rudimentary domes were probably equally as old, but all these forms were of a primitive character. The arch, known to us as a series of blocks ranged about a curve and held together by the stability of the abutments, was not introduced by the Egyptians as such. They knew it as the upper part of a horizontal excavation in a mass of mud or clay, such excavation gradually diminishing upwards in the centre by slanting or rounding, and, if the material be fairly compact, a respectably-sized hole would be made and would remain without falling in. This was the principle employed by the Egyptians. When building walls with mud gave place to sun-dried brick (which, after all, is mud divided into sections) it was found possible to make concave roofs or ceilings by gradually reducing the distance apart of the walls by sloping courses made to rise gradually from the side walls. No centering was used, as each course was made to adhere to the last with wet mud. The Romans developed this principle in their concrete construction. The Egyptians seem to have conceived the idea of ranging wedge-shaped blocks round a curve after making vaults or domes as above described for over 2,000 years. The first of these arches appears to have been rudely pointed.

Domes were used as coverings from the earliest times. Storehouses some 6 ft. in diameter and other circular buildings have been discovered so roofed. In carrying a circular dome over a square, the difficulty at the corners was overcome by gradually rounding and reducing the corners and so gathering them towards the vault. This is probably the precursor of the Byzantium pendentive.

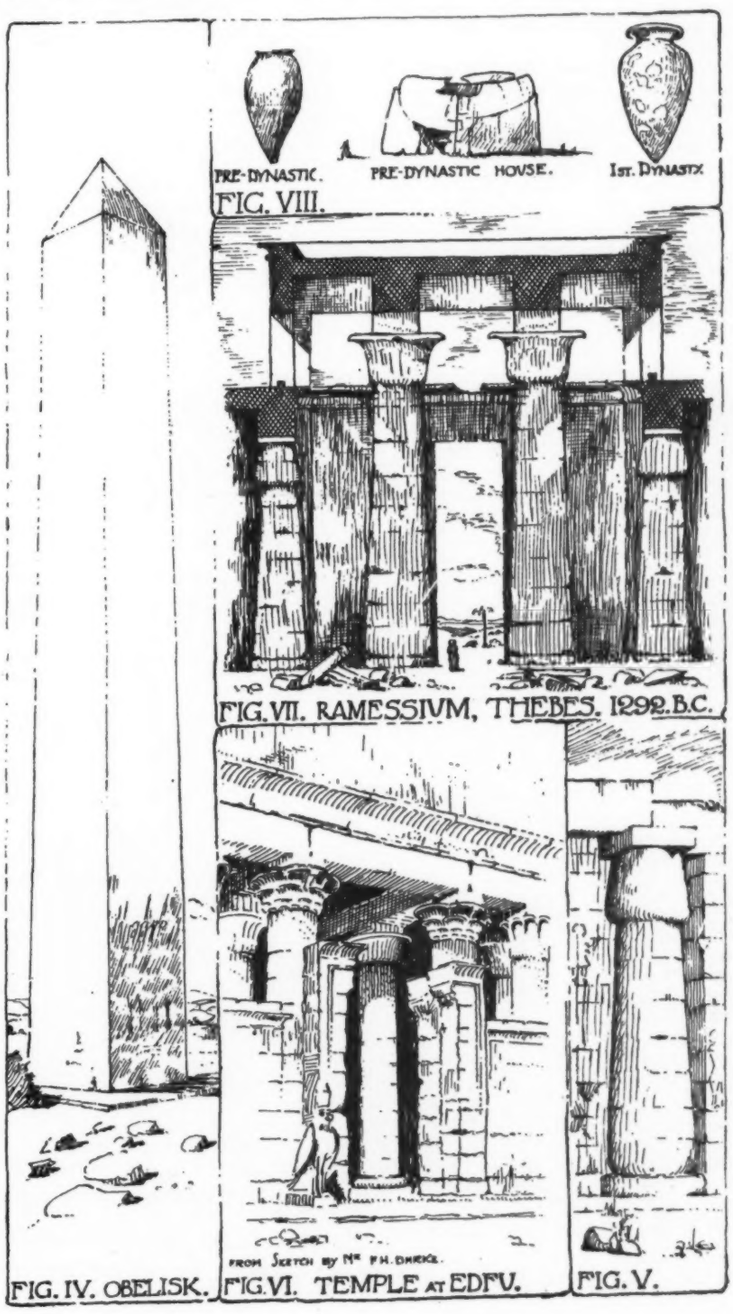
Materials.

BRICKS.—The bricks were of mud mixed with straw stubble and baked in the sun, or sun-dried. The baking of these bricks was taken from pottery, in which art the Egyptian excelled (*see* Fig. VIII). Some bricks, enamelled blue and green, have been found. Bricks for arches were sometimes roughly cut to a more or less wedge shape. Brick structures were plastered with mud to protect them from the weather.

MASONRY.—In pre-dynastic ages stone had been cut with wonderful precision. During the Second Dynasty buildings were erected throughout of stone, and masonry, from rubble to fine ashlar in large blocks, was in frequent use. It was bedded in plaster or in a mortar of plaster, sand and pounded brick. Jointing by dovetailed cramps of stone, wood and metal was also in use. Masonry was wrought with great skill and accuracy. Saws, tubular drills and the lathe were employed. The use of fine material and the conquest of intractable materials were the ideals achieved. Such accuracy depended on the desire of the builders for the realisation of perfection, the use of fine material and the conquering of refractory substances.

Workmanship.

A curious manner of bedding masonry and brick-work in undulating courses rising towards the angles of a building is frequently seen, and is explained by the usual battering face making it difficult to bond the work at the corners, so the angles were tilted partially to overcome this difficulty. Corrugated forms of walls were common in the Twelfth Dynasty, and were designed to give elasticity and stiffness, as also was the practice of building in sectional lengths with vertical straight joints to allow for expansion and contraction of the material under violent changes of temperature ;



possibly the corrugated walling contributed to the same desired result. The abundance of labour assisted greatly in attaining the accuracy of workmanship so displayed.

Other Arts.

The Egyptians not only excelled in architecture, but the allied arts were developed to an equally high standard.

SCULPTURE.—Sculpture early matured, including work in bronze. Besides sculptures in the round they practised relief work of exquisite delicacy. Statues of the human form belonging to the Fourth Dynasty (B.C. 3766 (?) to 3566) were nearer natural perfection than those of any later period.

PAINTING.—The painting of friezes with battles, religious, domestic and pastoral scenes, dancing and hunting, animals and birds, was common, and all were reproduced in the most remarkable manner.

SURFACE DECORATION.—Surface decoration, such as polishing, gilding, inlaying wood with ivory, and inlaying stone with bright-coloured tiles was brought up to a very high standard at an early date.

Conclusion.

Out of this, the first phase in the development of historical architecture, the outstanding features are briefly :—

(1) The marked influence of the nation's religious beliefs on the development of its architecture.

(2) The mysticism of the age and the desire of the priesthood to foster it, which is especially noticeable in the planning of the temples for the living and the graves of the dead.

(3) The origin and development of basic principles of construction which have survived to the present time, for example, the post and beam, arch, vault, dome, &c.

(4) The application of science to buildings, as in orientation, distribution of weights over areas, methods of counteracting optical illusions, expansion and contraction of materials.

(5) The proper use of material at hand, such as mud, reeds, stones, rock, &c., in producing works of architecture.

(6) The remarkable accuracy and delicacy of execution.

INVERNESS WAR MEMORIAL.

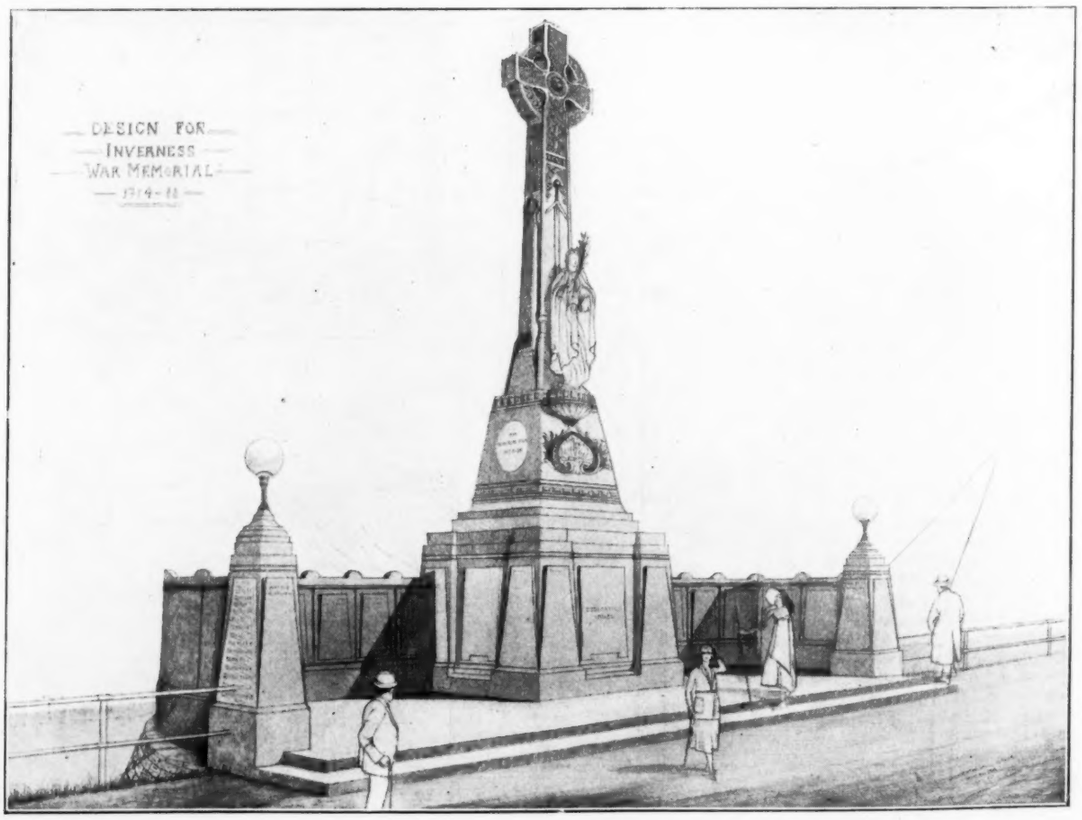
The design illustrated on this page was placed first in an open competition in May last. The memorial is to be erected in the capital of the Highlands, and the central portion takes the form of a large Celtic cross enriched on all its faces with ornamental details peculiar to the style, and buttressed on the sides by smaller Celtic crosses, all resting on a tapering dado on the front face of which is carved, in relief, the arms and supporters of Inverness, the other three faces being occupied by raised oval bosses for carving or inscriptions. The dado is supported on a high square base having projected angles, between which are raised panels for dedication and other inscriptions. The whole of this central portion is of polished Corsehill (Dumfries-shire) stone, a fine-grained micaceous sandstone of a rich red colour. On each side are low panelled walls of polished Covesea freestone, the panel spaces being filled in with red Corsehill stone, on which will be inscribed the names of the fallen. The walls curve forward at the outer ends and terminate in square tapered piers, on the panelled faces of which battle honours will be cut. The whole space between the piers and five feet in front of the central base is formed into a polished concrete platform, raised two steps above the ground level. The memorial is to be erected at Cavell-gardens, a fine, open level site, a short distance further up the river, and directly opposite the Northern Infirmary. The architect is Mr. John Hinton Gall, Lic.R.I.B.A., Inverness. The cost of the memorial will be about £1,700 (exclusive of the figure of Peace shown on the drawing, which may not be executed). The height to top of cross is thirty-three feet, and the base of the central part is about 10 ft. sq. The contractors for the foundation and concrete work are Messrs. L. Maclean & Son, Inverness, and Messrs. A. & D. Davidson, of Inverness, are carrying out the monumental work above the platform level.

River Trent Widening Scheme.

The scheme for improving the Trent, whereby the river will be rendered navigable from the Humber ports right up to Nottingham for boats of 200 tons, has been commenced. The first of the locks which will be necessary is at Holme Pierrepont, a few miles below Nottingham. The cost of this lock will be £37,000, and the whole scheme will involve an outlay of about £200,000. Work for 130 unemployed will be provided on the first lock for eighteen months. It is anticipated that Nottingham will eventually have a highway, 250 ft. wide, to the sea.

Bournemouth & District Improvement Schemes

A conference, representative of the various public bodies in Bournemouth, Poole and Christchurch, was held at Bournemouth on September 28, for the purpose of suggesting local schemes which might be undertaken for the relief of unemployment in this area. It was decided to approach the Cabinet Committee on Unemployment in regard to carrying out the following schemes :—Bournemouth : The New Pavilion, the new entrance to the pier, the protection of cliffs and foreshore, and road improvements. Poole : The training bank in Poole harbour, the Holes Bay reclamation, Oakdale and Sterte-road improvement, Hamworthy sewerage scheme, Sandbanks improvement and Wallis Down-road. Christchurch : Quay Meadow and St. Catherine's-hill restoration. Broadstone : Sewerage scheme.



Inverness War Memorial Competition.

Accepted Design, by MR. JOHN H. GALL, Lic. R.I.B.A.

THE USE OF ELECTRICITY IN WORKING-CLASS DWELLINGS.

An interesting report on the use of electricity in working-class dwellings has recently been issued by the British Electrical Development Association, Inc. (E.D.A. No. 167, price 10s.), with a view to promoting the adoption of electric lighting and cooking, and to a certain extent of electric heating, in new buildings of this type. The report has been prepared for the E.D.A. Joint Committee on Domestic Electrification, of which Mr. A. F. Berry is chairman, by Messrs. G. Blair Imrie and T. G. Angell, architects, assisted by Mr. W. Gordon Allen in connection with the bills of quantities. Mr. Alan Kirk has prepared and priced the quantities for the electrical installation, and the prices, which are based on current London rates, have been verified by Messrs. F. & H. F. Higgs, Ltd., builders and contractors, London.

In a brief preface Mr. J. W. Beauchamp, Director and Secretary of the Electrical Development Association, refers to the changed conditions which have placed new burdens on the householder and necessitated the adoption of the most efficient and time-saving devices in order to reduce the drudgery and waste which too often characterise the domestic regime. The remedy which he advocates is, naturally, the greater use of electricity for every possible purpose, and the report is intended to show how this can be done, at any rate in the first instance. It is stated that a house equipped for electric lighting and cooking, and partly for electric heating, costs no more than a house provided with the usual arrangements for the use of coal but with no provision for artificial lighting at all, and costs £34 less than a house equipped for gas lighting and cooking and part heating. Consequently, "where a supply of electricity can be obtained at rates which are fairly competitive with gas or [coal] fuel, there can be no good reason for delaying the construction of houses on the principles outlined in this report." Of course, the proviso is of considerable importance; if the running cost of the electrically-equipped house is likely to be greater than that of its rivals, there is not much hope for its selection by the artisan. This question, however, is not investigated in the report before us; we hope that it will be the subject of a supplementary report in the near future.

For the purpose of the comparison, Mr. G. Blair Imrie has taken an approved design for a working-class house suitable for urban areas, known as No. 178 of the Ministry of Health, and has provided plans showing the arrangement and equipment in each of the three cases, as well as one showing the wiring details. The fundamental considerations by which Mr. Imrie has been guided are as follows:—At least one coal fire should be provided, in the living-room or kitchen, not of the range type, but a modern combination suitable for warming the room, cooking, and heating water during the cold months. An alternative method of cooking is desirable for use at other times, as well as means for heating water when the principal fire is not in use. Warming the parlour and all the bedrooms should be accomplished without coal fires, in order to save labour, increase the available space, and reduce the cost of upkeep.

In the "coal" house the living-room is fitted with a stove of the "Interoven" type for warming, cooking, and heating water. A small portable range is provided in the scullery for cooking in summer, with a side boiler for heating water. The other rooms are fitted with mantel register stoves. It is pointed out that often, owing to the trouble and cost of a coal fire, the parlour is not used as much as it should be, and in case of illness during cold weather heating a bedroom involves much labour and inconvenience, whilst the cartage of fuel and ashes, and the emission of smoke, are other disadvantages of the use of coal.

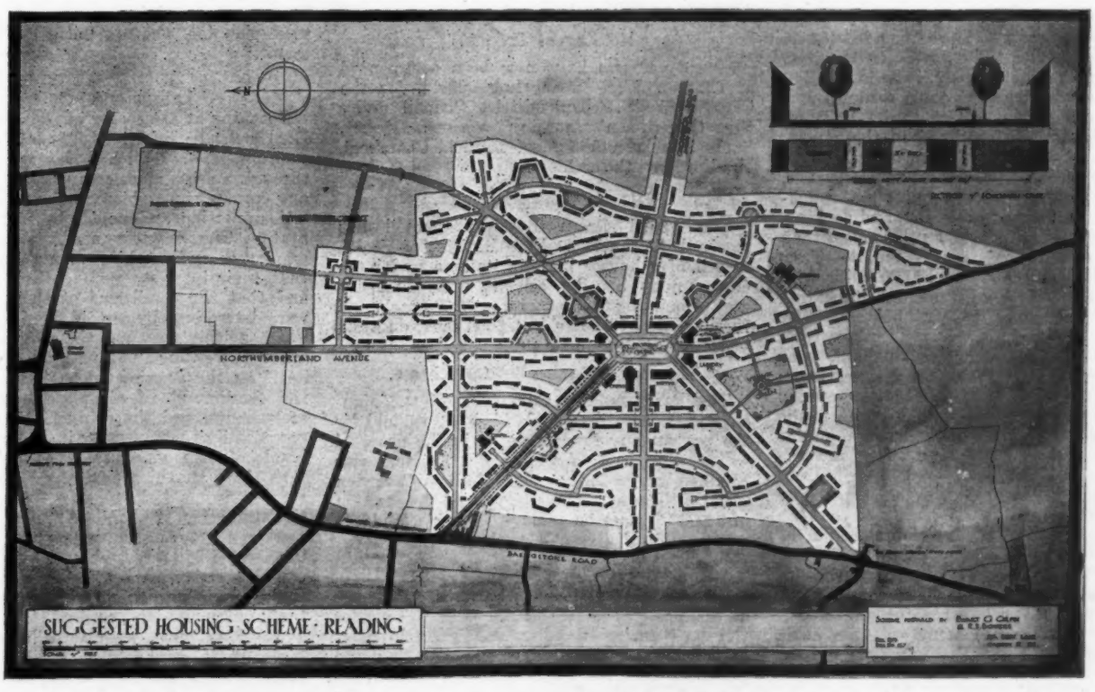
In the "coal and gas" house an "Interoven" stove is fitted, with a gas stove and gas circulator or geyser for heating water in the scullery and gas fires in the other rooms. Ventilation is provided for by outlet flues. Lighting is effected with gas pendants and brackets. While the cost of the house is less than that of the "coal" house, the saving effected by the small gas flues is stated to be not very great, as, though less material is used, the cost of labour on the small flue is greater in proportion.

In the "coal and electric" house (illustrated in our last issue, p. 416) the living-room is fitted with an "Interoven" stove, and an electric cooker is fixed in the scullery. When the fire is not in use water is heated with an electric geyser, circulator, or heat-storage tank, according to local circumstances. Wall sockets are provided for electric fires in the bedrooms, but only two portable electric fires are supplied, as more than two are not likely to be required simultaneously. Controlled inlet ventilators are provided in each room, with outlet ventilators opening (with two exceptions) into one ventilating flue. Owing to the fact that electric fires and cookers have the minimum fire risk, and are not permanently built into the structure, says Mr. Imrie, the architect has the greatest freedom in design and can choose the best arrangement with regard to the site, natural lighting, ease of access and working. The heating appliances can be placed in any position desired by the user, one chimney stack takes the place of three, and the interior is unobstructed by fireplaces. The same advantages of convenience apply to the use of cooking, ironing, and other electrical appliances in daily use. Lighting is effected by pendants, which have the advantage over gas that they can be comprised within a depth of 9 in. from the ceiling, and may therefore be situated in the most suitable positions, whereas gas and oil lamps often have to be carried on wall brackets, an inefficient method of lighting.

The bills of quantities deal only with the additional work required in connection with heating, cooking, and lighting, the cost of the cottage being assumed at £660 when all work in connection with fires, including hearths, breasts, and stacks, and with hot-water services, has been omitted. The quantities, taken out in minute detail, are quite different in the three cases considered. The following table summarises the conclusions:—

Scheme.	Price of cottage (less fires, &c.)	Additional work in connection with heating, cooking & lighting.	Total.
	£	£ s. d.	£ s. d.
No. 1. Coal (no lighting)	660	182 11 7	842 11 7
No. 2. Gas ..	660	216 12 2	876 12 2
No. 3. Electricity	660	182 8 11	842 8 11

The electrical installation comprises nine lighting points, all fitted with pendants (except one batten-holder in the w.c.) and modern glass shades (but steel in the scullery and w.c.); there are eight one-way switches, and two two-way for the stairs. The heating apparatus, on a separate circuit, includes two 1½-kw. radiators, with five wall-sockets and switches, one 4-kw. cooker, with switch, a wash-copper and a water-heater with sockets and switches. The wiring is carried out in accordance with the I.E.E. Rules, in heavy-gauge enamelled screwed welded conduit, with 600-megohm v.r. cable of C.M.A.



MESSRS. EWART G. CULPIN & R. S. BOWERS, Architects. (*See p.* 458.)

quality; all fittings and accessories are of British make and standard quality, and the conduits are efficiently earthed.

In his general remarks on the subject, Mr. G. Blair Imrie indicates a decided preference for electrical methods. With respect to the warming of rooms, he cites recent medical research in favour of low air temperature combined with free but draughtless ventilation and a supply of radiant heat, conditions which are realised with the electric fire, as it consumes no air and produces no fumes, so that the ventilation can be controlled quite independently of its operation. As he says, "heating apparatus of this type is particularly adapted for use in rooms where artificial warmth is not regularly required"; there, however, he touches the weak point of the system—it is far too expensive for prolonged periods of use, except in emergencies, as in the case of sickness. For temporary use it is admittedly very well suited, and if the cost of electrical energy ever comes down to a sufficiently low value its usefulness will be correspondingly extended. For heating water very similar conditions apply; the electrical method is quite practicable, and for small quantities of water its cost is immaterial, but when large quantities are in question the cost is a very serious matter. Mr. Imrie refers to the possibility of storing heat in water with a small current flowing during long hours, a useful class of load which a supply undertaking can cater for at a low price, but the necessary apparatus is not included in the estimates, nor is any electrical water heater quoted for, although it is mentioned and shown on the plans (a circulator priced at £9 0s. 6d. is charged against the gas installation). For cooking, coal is condemned in comparison with gas and electricity; at the same time, it should be borne in mind that in this small house coal would be used for cooking during the winter months for the sake of economy. Even for ventilation, the efficiency of a coal fire is discounted by the author, who points out that much of the vitiated air remains stagnant in the upper part of the room, while the fire draws cold air across the floor. He prefers controllable air inlets at a low level and outlets at the ceiling level, but whether the housewife would make efficient use of these is a doubttul question. One point upon which Mr. Imrie touches might have been emphasised—the fact that with electric lighting the life of the decorations, as well as of curtains, &c., is undoubtedly prolonged, and they remain far cleaner than where gas or oil is used.

The report is of considerable value in focusing attention upon the subject with which it deals, and the Association is to be commended for its enterprise in putting the question to the test, if only on paper; incidentally, it is interesting to note that in a northern town a number of five-room cottages are about to be built on lines resembling those outlined in the report. As long ago as 1915 eight villas, with four to six rooms, were built at Dumbreck, near Glasgow, without any chimneys, being equipped throughout with electric lighting, heating, and cooking, but these were of a more pretentious class than the cottages dealt with in the report. They varied in size from 7,000 to 12,000 cubic feet, and each contained from 10 to 12 kw. of heating appliances, including water heaters. The annual consumption was found to range from 7,000 to 14,000 units. At Billingham, near Stockton-on-Tees, last year the Newcastle-on-Tyne Electric Supply Co. built over seventy houses very similar to the one dealt with in the report, with one fireplace in the living-room for warming the room and heating water, and one fire in the room above, all the rest of the heating and cooking, as well as the lighting, being effected electrically. It was estimated that the annual consumption of electricity would be from 3,480 to 3,780 units, according to the size of house; if the average price of energy were 2d. per unit, the cost would thus amount to £30 a year, rather a heavy expense for an artisan. The houses were intended for the Company's employees, and the price charged may have been lower; at 1d. per unit the proposition would seem quite reasonable.

An interesting experiment was made by the Glasgow Corporation in 1918, when two tenement dwelling-houses were equipped with electrical apparatus for all domestic purposes, and careful records were kept. Each house consisted of three rooms and a bathroom, and was equipped with about 13 kw. of apparatus. The annual consumption of electricity averaged 10,500 units, and the cost, at 4½d. per unit for 70 units and ¾d. per unit afterwards, was about £33 10s. It was estimated that if coal and gas had been used instead of electricity the cost would have been £16. If a great development took place in this class of load, which would immensely improve the load factor of the general supply, a considerable reduction, it was estimated, could have been made in the bill for electricity—to, say, £23 10s. Obviously, too, if in these test cases coal had been used for heating and cooking during the winter, as in the house dealt with in the report, the aggregate bill for electricity and coal would have been reduced.

Even if the "coal and electric" house is a few per cent. cheaper in first cost than the "coal and gas" house, this is only a minor factor in the problem. The tenant, while fully appreciating the comfort and convenience of electricity, will have the same rent to pay, and will look askance at any increase in the running cost. Whether he will value the advantages of the electric service commensurately with the price he has to pay for it will depend upon his mental outlook and the length of his purse. That electricity will be notably cheaper within the next few years is more than doubtful; even if the price of coal is lowered the capital cost of generating and transmission plant will always entail heavy capital charges, the effect of which can be minimised only by great improvement in the load factor.

HOUSING AND TOWN-PLANNING NOTES.

Worsborough Housing Scheme.

The Worsborough Urban District Council is erecting 75 houses at Worsborough Dale in connection with its State-aided housing scheme. Mr. A. Whitaker, of 18, Bank-street, Sheffield, is the architect.

Tenders for Newcastle Houses.

Tenders received for the erection of 292 houses on the Pendower estate, which are to be considered by the Newcastle Corporation Housing Committee at an early date, range from £200,000 to £290,000.

Housing at Clayton.

Seventy houses have now been commenced at Clayton West, near Huddersfield, for the Clayton West Urban District Council under the Government housing scheme. Messrs. Samuel Jackson & Son, of Tanfield Chambers, Bradford, are the architects.

Sale of Municipal Houses.

The Wood Green Borough Council has received the sanction of the Ministry of Health to sell fifty houses built in its area under the Government housing scheme. The inclusive cost of building the houses was £1,500 each, and they are now to be sold at £800 each, on a 99-year lease at a ground rent of £9 9s. per annum.

Manchester Garden Suburb Scheme.

The Parliamentary Committee of the Manchester Corporation has decided to withhold for the present any further action in the proposal to acquire the Wythenshawe Estate, near Northenden, for the purpose of building a garden suburb. The scheme contemplated the erection of 50,000 houses on some 4,500 acres, and the construction of five new roads.

Woolwich Housing Scheme.

Sir Alfred Mond, presiding at a conference at the Ministry of Health last week to consider the question of housing and unemployment at Woolwich, with a view to mitigating the position, authorised the Borough Council to obtain tenders for 100 additional houses under the Government scheme and also to proceed with the making of certain further roads.

Proposed New Arterial Road.

At a special meeting of the South Shields Town Council the Mayor was authorised to communicate with the Mayor of Sunderland with the object of securing the co-operation of the Sunderland Town Council in the construction of an arterial road between the two towns. The Housing and Town-Planning Committee has been instructed to negotiate with the Ecclesiastical Commissioners for the acquisition of land for the making of the proposed 120 ft. road to Cleadon.

PROPOSAL FOR A HOUSING SCHEME, READING.

THE sketch lay-out reproduced on page 457 was prepared by Messrs. Ewart G. Culpin & R. S. Bowers for the Corporation of Reading, at a time when various sites were being considered, but nothing has so far been done with this particular site, which, it is possible, may be partially developed as a private scheme.

In connection with the lay-out, the architects write: "It deals with a large area of ground east of the Basingstoke-road, offering excellent facilities for the formation of a satellite suburb, designed as a self-contained community, but linked up with the parent town. From east to west, the site is centrally traversed by a sewer crossed in the centre by Longbarn-lane, which straggles across from north-west to south-east, and is met again in the centre by the line of Northumberland-avenue—a road defined on the ground but not made up. Given these conditions, the best lay-out seemed to be that of a central space with roads radiating therefrom, and a few small ring-roads to facilitate access and develop the further portions of the site. Longbarn-lane is shown straightened and widened to allow for a tramway extension to the new centre as indicated, and sites are allocated for a village green and the various special buildings likely to be required by the projected colony.

"Probably the chief point of general interest in the scheme is the manner in which the ordered lay-out compares with the casual haphazard development of the fringes of the town seen on the left of the plan. Here it will be noticed that Northumberland-avenue, which has the making of a fine artery, has been laid out in such a way that a church lies dead in its path to the centre of the built-up area. This seems a striking example of the need for town-planning the outskirts of all growing towns."

Labour and Industry.

Speaking at a meeting in Glasgow last week, Lord Inchcape, referring to the present industrial position, said British industry was passing through a crisis more complex and severe than any known since this country ceased to be a self-supporting and predominantly agricultural State. The greatest need to-day was that employers and working men should recognise that their interests were entirely inseparable, and that the conditions of their co-operation were determined by certain fixed economic laws which neither they nor the Government could alter. A hustling and fanatical section imposing itself on the acquiescent majority was one of the commonest of all phenomena in labour movements, and the control of British labour organisations was passing increasingly into the hands of men who were experts in terrorism. Was there anything that the State or they as employers could do to stop that development and strengthen the hands of the more temperate workers? He saw nothing repressive in suggesting a secret ballot of trade-union members before calling a strike. What was holding back trade to-day was the high cost of production, and if trade-union leaders realised that wages and work done must be placed on an economic basis, there would soon be little occasion to start relief works at the expense of the taxpayer.

THE BUILDING TRADE.

THE OUTLOOK IN THE BUILDING INDUSTRY.

We have received the following letter from Mr. F. J. Gayer, Managing Director of Messrs. E. A. Roome & Co., Ltd. :—

"SIR,—In spite of the large volume of building work that is necessary, and has been necessary for so long, the industry has not escaped the unemployment that has descended on the country. For the general causes and remedies one might say the general Press is the place to ventilate one's views, since the blight is common to most, if not to all, industries, but there are certain technical features peculiar to our industry that it may be worth exploring in the natural hope of finding a solution, if only partial. These features are best summarised as follows :

"UNCERTAINTY OF ASSESSMENT.—Even in normal times the building owner is a much-harassed man, and long before he has reached completion of his building project, when adjoining owners and obsolete and vexatious building by-laws have left their mark upon his brow, he wonders why he ever started, remembering the old adage that 'fools build houses and wise men buy them after.'

"The climax comes in the uncertainty of the amount at which his building will be rated, and with the rates inflated to their present extent this becomes a very important item. I hold that a building owner has a right to know before he embarks on building operations exactly what his assessment will be. If it is possible to obtain a building estimate without adopting the war-time methods of executing the work first and ascertaining the cost afterwards, it should be equally possible to arrive at an assessment in a like manner to that in which the quantity surveyor is able to arrive at the bills of quantities for the complete building.

"Further, the assessment should be definitely based upon pre-war and not present costs, otherwise he who would by his enterprise foster industry is penalised. A definite ruling on these lines should be issued broadcast to every rating authority in the land.

"HOUSING.—Everyone agrees that since the State-aided schemes have received their *coup de grâce* private enterprise must step in and endeavour to cope with the ever-increasing demands, but until the cost more nearly fits the revenue private enterprise will continue shy. A suggestion has already been put forward that all new houses under a certain size should be exempt from local rates for a period of, say, five years. This would not produce a great injustice or hardship to the local authorities, since many of the services are at present being performed for those who are living in congested premises, waiting for the time when they can have a home of their own, and probably in five years' time the rates will be nearer to pre-war value. Were this course adopted many of the idle sites and empty spaces in our suburbs would soon be covered with desirable residences, and this without inflicting hardship or cost on anyone, and without State aid.

"COST OF MATERIALS.—If one is fair to one's conscience, one must admit that wages have shown a more marked fall than have the prices of materials, and with half the average contract representing material this is a serious deterrent to building operations. It would appear that the manufacturers have yet to learn their total profits would be enhanced by a larger output at cheaper prices.

"LABOUR.—The trade union officials, like the rest of those in the industry, no matter what their position, must be appalled by the fact that the slump is not yet bad enough to fit the depleted number of plasterers available, and with a view to fostering employment in the other branches of the craft and to bring the cost of plastering down to an economic level it is worthy of consideration whether it is not in the interests of the operatives as a whole to take prompt steps to remove or abate the monopoly position of one section of their industry.

"Most diseases have, in course of time, produced remedies, and it is not impossible that the shortness of plasterers will in the near future, if not altered, produce substituted materials. This, in fact, has already commenced to operate, as witness the introduction of the various asbestos and ply boards as plastering substitutes."

In a letter to *The Times*, Mr. Ernest Newton, R.A., F.R.I.B.A., says: "Slackness in the building trade is responsible for much unemployment. Full activity would mean not only regular employment for building labour, but corresponding activity in hundreds of other industries. Here is an industry fully equipped, with staff and machinery ready. Two things only are necessary to set it going at full speed : a little enterprise and courage on the part of the public, and lower cost. Lower cost can only be achieved by lower prices of materials, lower wages and higher output. Wages should be generous but reasonable ; there should be no limitation of output. Both the operatives and unions deny that there is any official limitation, but it is common knowledge that it exists, whether official or not. It seems impossible to explode the absurd fallacy that unless a man limits his output there is not enough work to go round. Of course, the cheaper building is, the more is put in hand. There is at the present moment enough work held up because of the impossible cost to keep the building industry fully active for many years. Plans are all ready, and work could begin to-morrow if prices were lower. No one expects to get down to pre-war levels, but we could approximate to them if every man put his back into his job. Leases in London are falling in, and it is said that the ground landlords, finding it more to their immediate advantage to keep the tenants in the premises at a rack rent than to grant a building lease at a ground rent, are inclined to put obstacles in the way of granting new leases to intending builders. This is a short-sighted policy, and if property owners were more far-seeing these rebuildings would mean much employment. Again, it is stated that there are hundreds of houses in the West End of London which are too big to let and which could be converted into good flats, but the ground landlord refuses his permission, and these houses, the alterations of which would provide work for thousands, stand empty. Homes are wanted for every class of the community, and if cost can be reduced to a reasonable level the prospective demand for building of all kinds is practically unlimited."

WAGES ON PUBLIC WORKS.

THE Public Works Conciliation Board has agreed to the following rates of wages per hour for men engaged on public works in the London area (the City of London and the Metropolitan Police District) to take effect as from the beginning of the first pay period following September 30, and to remain in force for three months ending December, 1921 :—Bricklayer, 2s. ; Blacksmith, 1s. 11½d. ; Carpenter and joiner, 2s. ; Concrete leveller, 1s. 7d. ; duct or earthenware drain layer, 1s. 8d. ; Fitter, 1s. 11½d. ; Granite mason (kerb, &c.), 2s. 0½d. ; Granite sett dresser, 1s. 11½d. ; Jointer, 1s. 8d. ; Kerb fixer, 1s. 11½d. ; painter, 1s. 11d. ; Pavior, 1s. 11½d. ; Platelayer, 1s. 8d. to 1s. 9d. ; Platelayer labourer, 1s. 7d. ; Pneumatic pick operator, 1s. 8d. ; Rammerman, 1s. 8d. ; Scaffolder, 1s. 10d. ; Screeder, 1s. 8d. ; Steam roller driver, 1s. 11d. ; Street mason and flag dresser, 1s. 11½d. ; Tarpot man, 1s. 7d. ; Timberman, 1s. 8d. ; Wood block layer, 1s. 8d. ; Watchman, 8s. 0d. minimum day or night.

For men working in "boots" the rate is 1d. an hour extra. Men working in dirty or dangerous places are subject to special rates and conditions. For boys, the following rates will apply :—14 to 16 years, one-third of labourers' rate (1s. 7d. ; 16 to 18, one-half of labourers' rate ; 18 to 20, two-thirds of labourers' rate.

The recognised working week consists of 47 hours, and when overtime is worked at the request of the employer the following rates apply :—For the first two hours in any one day, time-and-a-quarter ; for the second two hours, time-and-a-half ; after that, double time ; Saturdays, noon to 4 p.m., time-and-a-half, after that double time ; Sundays and Bank Holidays, double time. The working day commences at 7 a.m., and ends at 5 p.m. ; one-and-a-half hours are to be allowed for meals. On Saturdays work commences at 7 a.m., and ends at noon ; half-an-hour for breakfast.

THE COST OF BUILDING MATERIALS.

AT a meeting of the Property Owners' Protection Association, held in London, on Saturday last, Mr. Edwin Evans (President) said the Association had decided to fight a decision given in the Whitechapel County Court to the effect that fresh notices to quit must be given each time before the rent was raised. Where rates were decreased property owners must allow the amount to tenants who paid rates in their rents.

A resolution was passed protesting against the hardships imposed upon property owners under the leasehold system of land tenure, and urging the promotion of legislation to bring about a system of leasehold enfranchisement fair to both freeholders and leaseholders.

Mr. A. G. Shearing said there would very shortly be a reduction all round in the cost of materials for building. At present the reduction was something like 15 per cent. to 20 per cent., but that was only the beginning. The "rings" in the building trade were about to be broken ; they were breaking themselves. The iron pipes "ring" had fallen ; pipes were now being offered by various competitors and the price had come down to £3 per ton. Timber was coming down by something like 50 per cent. The action of Sir Alfred Mond in curtailing the housing scheme had been the first step to restoring private enterprise in that direction.

WAGES AND HOURS OF LABOUR.

AT a conference of incorporated accountants held at Liverpool last week, Sir Josiah Stamp said some valuable discoveries were made during the war as to the relation between human fatigue and hours of work. At one time the Government was getting too much of a certain product. It was suggested that overtime by the workers should be reduced and the hours of output lessened. It was found that a reduction in the total hours of work would result in a sufficiently increased output per hour in the remaining hours to give an actually larger output than before. The point at which this process stopped, and the steps in the relation between hours of work and output efficiency, were all beginning to become known as a part of industrial administration. Administration had not, however, told them much, nor examined to any extent the psychological effect of an alteration in the wage rate on output. They knew that in certain circumstances, if they paid more they got more, but they also knew there was a point at which an improved wage lessened output because the worker was aiming not at the maximum amount he could get in money but at a fixed figure with the least effort.

NEW INVENTIONS.

SHUTTERING FOR CONCRETE.

THE "Easiform" cottage construction which is illustrated on this page is a system of constructing houses of 8 in. clinker concrete walls, wet mixture process, which, by means of the special shuttering and scaffolding, permits of unskilled men building houses at an average cost, it is claimed, of about 20 per cent. less than brickwork.

The basis of construction is a form 6 ft. by 2ft. by 3½in. All forms are of standard size except the four corner forms of each block and closures. The forms present a substantial surface to those adjoining, and on being secured to them give rigidity and accuracy of position. When the first row of forms is set in position it is filled with concrete and the second row placed on and secured to it and to one another by bolts or pins. When the second row is filled with concrete, the first is removed and placed and secured on to the top of the second row, thus forming the third course, which process is repeated up to roof height. Each course is 2 ft. high.

The success of the system is claimed to be largely achieved by the carefully-designed method of scaffolding by means of composite uprights and iron putlogs engaging with the shutters, which enables the lifting to be done at the necessary pace without interfering with the construction.

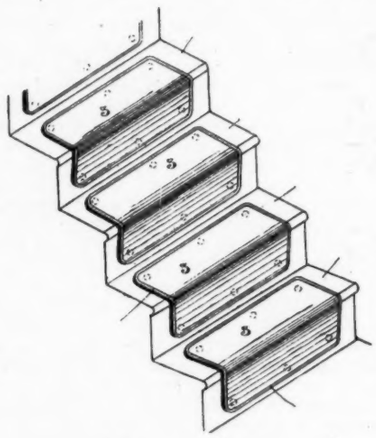
The walls are of cement concrete (wet mixture) with a clinker aggregate, finished on the outside with waterproofed cement rendered and roughcast. The only skilled men essential are one working foreman to twelve unskilled men for four houses. It is stated that this type of timber shuttering, when correctly made of well-seasoned timber, cut true out of the solid and well preserved, will last almost indefinitely if properly handled.

We are informed that a wall of cinder concrete built on this system which contained a considerable proportion of coal and combustible material was tested by building a chamber and using it as a furnace for three tests of seven hours each, the temperature being ffom 500 deg. to 800 deg. Fahrenheit. The result of the test showed that the wall was undamaged, being only slightly pitted where pieces of coal were actually on the surface.

The shuttering is supplied by Messrs. John Laing & Son, Ltd., of Carlisle, who have used it on various housing schemes on which they are engaged, including those at Wrexham, Hereford and Kenfig.

STAIR CARPETING.

THE illustration on this page is a new method of carpeting stairs, for which a patent has been granted to Mr. A. E. Michell, of 20, Undercliff-road, Lewisham, S.E. 13. With the object of facilitating cleaning and eliminating the use of stair rods, each tread is covered with a separate carpet or mat, which is mounted on a base plate of flexible but inelastic material, such as lead or zinc, or upon rigid material, such as sheet-iron. The front part of the mat is bent over the nose of the stair, and pins rivetted to the base plate with engaged sockets maintain the covering in position. As an alternative, hooks or rings might be attached to the rear of the mats to engage with stair-rod eyes. The portion of the mat overlapping the nose of the stair is secured in position by fastening



Stair Carpeting.

devices which attach the material to the riser. To cover bends in staircases, pieces of carpet or matting of suitable size are used and secured in the same manner.

Plumbers' Wages.

It is reported that the Federation of Master Plumbers' Associations in the Ashton-under-Lyne area has reduced the wages of operative plumbers by 1½d. per hour, making the rate to be paid 2s. 1½d. per hour.

The Belgian Brickmaking Industry.

RECONSTRUCTION in the devastated regions in Belgium is now proceeding rapidly, states the *Manchester Guardian*, and one of its immediate results has been a revival in brickmaking. In 1913, Belgium had 1,517 brick and tile works, with a yearly output of some 1,800 million bricks. In pre-war times only a small percentage of these works were fitted up with mechanical appliances and plant, but the present boom is inducing more and more works to resort to machinery. A movement which has also considerably facilitated the introduction of modern machinery is the system of concentration which has swept over the brickmaking industry. Powerful concerns, comprising some 20 to 25 enterprises, and possessing large capital resources have been formed. Their yearly output is estimated at 400-500 million bricks. The largest works are on the banks of the Scheldt and the Rupel, south of Antwerp, where the present yearly output is estimated at 1½ milliard bricks. Eight brickworks, whose aggregate yearly output previously amounted to 15 million bricks, were amalgamated into a group whose combined production now amounts to 250,000 bricks per day, or 90 million bricks per annum. Owing to the extensive use of machinery, the cost of production only amounts to about 66 per cent. of that of other similar works.

National Federation of Master Painters.

The annual conference of the National Federation of Master Painters and Decorators of England and Wales is to be held at the R.F.A. Drill Hall, Ardwick, Manchester, from October 17 to 21. The annual general meeting of the Federation is to be held on October 19, commencing at 11.30 a.m., and is to be followed by the annual dinner at the Midland Hotel, Manchester. On October 18 an exhibition of apprentices' work and manufactures is to be opened by Lord Derby, and will be followed by the reading of a number of papers and discussions thereon. The programme also includes a reception by the President (Mr. J. Hewson Cantrill) and Mrs. Cantrill on October 17, an excursion to Blackpool on October 20, and excursions to places of interest in the neighbourhood on October 21. Further particulars of the conference may be obtained from Mr. W. G. Sutherland, 9, Albert-square, Manchester.

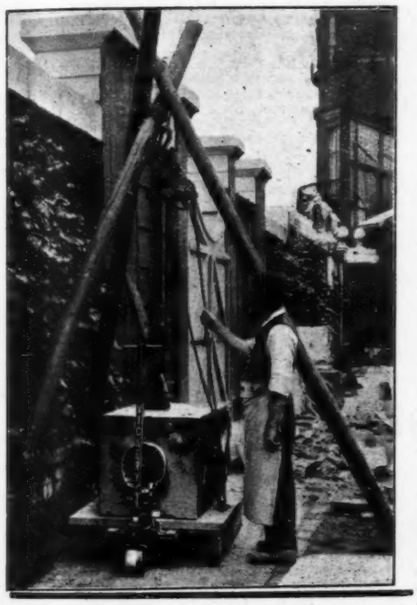
The Staveley Coal & Iron Co., Ltd., inform us that as the prices of their cast-iron pipes are no longer controlled by any association they will be quoting independently of any other pipe founders. They have recently extended their facilities for the manufacture of small diameter pipes up to 4 in., and hold a substantial stock of many larger sizes.

"Easiform" Shuttering.

DEVONSHIRE HOUSE GATEWAY.

STILL another famous link with the past is fated to disappear, and in the near future Devonshire House will be in the hands of the house-breaker. It is pleasing to know, however, that the gateway of the historic mansion is to be preserved. It has been secured by the Office of Works, and is now in course of re-erection, by Messrs. Holland & Hannen and Cubitts, Ltd., as an entrance to Green Park.

The gates are of early 18th-century workmanship, and are attributed to Warren, who made most of the gates for the leading colleges at Cambridge about that time. They are entirely of hand-wrought iron, and were originally made for Lord Heathfield's house at Turnham Green. They were afterwards removed to form the entrance to the Duke of Devonshire's estate at Chiswick, and from Chiswick they reached Piccadilly. The fine stone piers, rusticated, festooned and capped by a pair of sphinxes on guard, at one time formed part of the old forecourt entrance to Devonshire House.



In the work of removal great care was taken to preserve the stonework from damage. As the different pieces were taken down they were cleaned and dressed ready for rebuilding, and so that no harm should befall the parts (some of which weighed over a ton) in handling and transit, each piece of importance was conveyed to the new site separately. For this purpose a "Vickery" automatic loading transporter (supplied by Messrs. Vickery's (1920), Ltd., Nicholas-lane, E.C. 4) and a number of wooden platforms were employed. By this means it was possible to avoid chipping and other forms of damage, which might have resulted from a different method of handling.

Lincolnshire Builders' Federation.

Some 120 members and friends of the Lincolnshire and District Building Trades Employers' Federation attended a conference at Skegness last week, under the chairmanship of Mr. H. R. Thompson, the President. Amongst those present were Messrs. W. Thompson (Louth), Hewett (Leicester), W. Dobson (Secretary), J. H. Bowman (Stamford), J. Hodges (Burton-on-Trent), Wm. Moffat (Birmingham). Mr. H. Bryant Newbold (Organising Secretary of the National Federation of Building Trades Employers and editor of the official journal of the Federation) gave an address on the work of the Federation, and emphasised the importance of every builder becoming a member. The party afterwards inspected the Skegness housing scheme.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the building trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Bricklayers' Plasterers' Labourers.
Aberdare	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Accrington	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/	1/7½
Altrincham	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Ashton-under-Lyne	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Barnsley	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Barrow-in-Furness	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Barry	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Bath	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5
Bedford	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/4
Birkenhead	2/2	2/2	2/2	2/2	2/2	2/2	2/2	1/9½
Birmingham	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Bishop Auckland	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0	1/7½
Blackburn	2/0½	2/0½	2/0½	2 0½	2/0½	2/0½	2/0½	1/7½
Blackpool	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Bolton	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Bournemouth	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/4
Bradford	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Bridgwater	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/5
Brighton	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/4
Bristol	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Burnley	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Burton-on-Trent	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/6
Bury	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Cambridge	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/4
Cardiff	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Chatham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/3½
Chelmsford	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/4
Cheltenham	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5
Chester	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Chesterfield	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Colchester	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/4
Coventry	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Crewe	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/6
Darlington	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Derby	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Doncaster	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Dudley	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/6
Durham	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
East Glam. and Mon. Valleys	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Exeter	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½	1/4
Folkestone	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/3½
Gloucester	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/5
Grantham	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/6
Grays	2/0½	2/0½	2/0½	2/0½	2/0½	2/1	1/11½	1/7½
Grimsby	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Great Yarmouth	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/3½
Guildford	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/4
Halifax	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Harrogate	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Hartlepools	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Hastings	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/3½
Hereford	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/5
Huddersfield	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Hull	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Ipswich	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/4
Lancaster	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Leamington Spa	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/6
Leeds	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Leicester	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Lichfield	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/6
Lincoln	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Liverpool	2/2	2/2	2/2	2/2	2/2	2/2	2/2	1/9½
Llanelly	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
London	2/0½	2/0½	2/0½	2/0½	2/0½	2/1	1/11½	1/7½
Loughborough	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Luton	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/4
Maidstone	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/3½
Manchester	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Mansfield	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Merthyr Tydfil	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Middlesbrough	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Newcastle-on-Tyne	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Newport, Mon.	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/6
Northampton	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/4
Norwich	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½
Nottingham	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/5
Oakham	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/7½
Oldham	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/4
Oxford	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/6
Plymouth	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/9½	1/7½
Pontypridd	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/4
Portsmouth	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½
Preston	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/4
Reading	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½
Rochdale	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/3½
Rochester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6
Rugby	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/4
St. Albans	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½
St. Helen's	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/6
Scarborough	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/7½
Sheffield	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/6
Shrewsbury	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/4
Southampton	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/4
Southend-on-Sea	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½
Southport	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
South Shields	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Stockport	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Stockton-on-Tees	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/6
Stoke-on-Trent	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/4
Stroud	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8	1/7½
Sunderland	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Swansea	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/4
Taunton	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/4
Torquay	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/4
Tunbridge Wells	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½
Wakefield	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/6
Walsall	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/7½
Warrington	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
West Bromwich	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/7½
Wigan	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/4
Windsor	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½
Wolverhampton	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/6
Worcester	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/6
York	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/6

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the name of those willing to submit tenders, may be sent in; the name and address at the end is the person from, whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

OCTOBER 8.—**Bradford.**—HOUSES.—Erection of 64 houses Class A, and 132 houses Class B and B4, for the Corporation of the City of Bradford. City Architect, Town Hall, Bradford.

OCTOBER 8.—**Bristol.**—HOUSES.—Erection of houses on the Fishponds, Knowle, and St. John's-lane sites, for the T.C. Mr. Lessel S. McKenzie, City Engineer, Housing Department, 51, Prince-street, Bristol. Deposit £2 2s.

OCTOBER 8.—**Campden, Gloucester.**—COMPLETION STONE COTTAGES.—Completion of one pair of stone cottages at Station-road, Campden, for the R.D.C. Mr. W. L. Lissaman, architect, Broadway, Worcs.

OCTOBER 8.—**Chepstow.**—MARKET.—Removal of the present Cattle Market and constructing a new Cattle Market, for the U.D.C. Mr. J. N. Jefferies, Surveyor, Bridge-street, Chepstow. Deposit £2 2s.

OCTOBER 8.—**Edinburgh.**—HOUSES.—Erection of 44 two-story houses (22 blocks) at Longstone housing site, for the T.C. Mr. David M'Arthy, architect, 6, Albyn-place, Edinburgh.

OCTOBER 9.—**Panteg.**—HOUSES.—Erection of 20 houses at New Inn, for the U.D.C. Messrs. Fisher & Son, architects, Pontypool.

OCTOBER 10.—**Blaydon.**—ALTERATIONS.—Alterations and additions to Old Well House, Winlaton, for the U.D.C. Surveyor, Blaydon.

OCTOBER 10.—**Cardiff.**—HOUSES.—Erection of a limited number of houses at Ely, for the T.C. Mr. E. J. Elford, City Architect, City Hall, Cardiff. Deposit £2 2s.

OCTOBER 10.—**Carlton.**—HOUSES.—Erection of the following houses, for the U.D.C., viz.:—Carlton Hill South Site, 8 (Parlour type); Standhill-road site, 8 (Parlour type). Surveyor, Manor-road, Carlton, Nottingham. Deposit £2 2s.

OCTOBER 10.—**Evesham.**—CLASSROOMS.—Erection of temporary class rooms at Evesham Grammar School, for the Worcestershire E.C. Mr. A. V. Rowe, County Architect, 38, Foregate-street, Worcester.

OCTOBER 10.—**Glasgow.**—PAINTING.—For painter work required at Mount Blow House, Dalmuir, for the T.C. Office of Public Works, City Chambers, 64, Cochrane-street, Glasgow.

OCTOBER 10.—**Hanwell.**—HOUSES.—Completion of 12 houses, for the U.D.C. Surveyor, Council Offices, Hanwell, W.

OCTOBER 10.—**Panteg.**—HOUSES.—Erection of 20 houses, for the U.D.C. Messrs. Fisher & Son, architects, Pontypool.

OCTOBER 10.—**Ushaw Moor.**—ALTERATIONS.—For improvements at Ushaw Moor Passenger Station, for the North Eastern Railway Co. Mr. A. Pollard, architect, Irving House, Westgate-road, Newcastle.

OCTOBER 10.—**Wrexham.**—FENCING.—Supplying and fixing fencing at Little Acton, for the Board of Guardians. Mr. J. B. Bury, Clerk, 23, Chester-street, Wrexham.

OCTOBER 12.—**Glamorganshire.**—SCHOOL WORKS.—(1) New Infants' Department at Kingsbridge, near Gowerton; (2) Ystalyfera Intermediate School (additions); (3) Kenfig Hill, near Pyle, New School, for the C.C. Mr. Henry D. Rowland, Assistant Secretary to the Education Committee, Glamorgan County Hall, Cardiff.

OCTOBER 12.—**Huddersfield.**—PAINTING.—Painting the exterior woodwork and ironwork of 60 tenement houses and 6 scullery houses at Moldgreen, for the T.C. Mr. H. Sutcliffe, Borough Architect, 1, Peel-street, Huddersfield.

OCTOBER 12.—**Windsor and Salop.**—BUILDING.—(1) Erection of a new telephone exchange at Windsor; (2) farm buildings at Heath Hill, Salop, for the Commissioners of His Majesty's Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W. 1. Deposit £1 1s.

OCTOBER 13.—**Arklow.**—PAINTING.—For painting at the Technical School. Mr. F. F. MacCarthy, Secretary, Technical School, Wicklow.

OCTOBER 13.—**Doncaster.**—HOUSES.—Erection of 197 houses of various types on the Carr House-road site, for the T.C. Mr. R. E. Ford, Housing Surveyor, 3, Priory-place, Doncaster. Deposit £2 2s.

OCTOBER 13.—**Folkestone.**—FARM BUILDINGS.—(a) Erection of six cottages, (b) four small sets of farm buildings, (c) adaptation of the existing farm house, and (d) provision of water supply at Coombe Farm, Hawkinge, near Folkestone, for the Kent C.C. Mr. P. W. Cox, Chief Agricultural Officer, Sessions House, Maidstone.

OCTOBER 13.—**Glasgow.**—CONVENIENCE.—Construction of a public convenience in Main-street, Maryhill, for the T.C. Office of Public Works, City Chambers, 64, Cochrane-street, Glasgow.

OCTOBER 13.—**Sutton-on-Trent.**—BRIDGE.—Rebuilding bridge in Palmer-lane, for the Southwell R.D.C. Mr. R. Morris, Highway Surveyor, Southwell.

OCTOBER 14.—**Chester.**—ALTERATIONS.—Conversion of the administrative block into a Nurses' Home, at the Poor Law Institution, Hoole-lane, for the Board of Guardians. Messrs. John H. Davies & Sons, architects, 14, Newgate-street, Chester.

OCTOBER 15.—**Glasgow.**—ADAPTATION.—Adaptation of Inland Revenue Office, Glasgow, for H.M. Office of Works. Architect, H.M. Office of Works, 204, Drumsheugh-gardens, Edinburgh. Deposit £1 1s.

OCTOBER 15.—**Salop.**—BUILDING.—Erection of a temporary school building in asbestic material to accommodate 120 pupils, at Bishop's Castle, for the C.C. Higher Education Office, County Buildings, Shrewsbury. Deposit £3 3s.

OCTOBER 17.—**Chesterfield.**—HOUSES.—Erection of 31 houses, for the T.C. Messrs. Wilcockson & Cutts, architects, Knifesmith Gate, Chesterfield.

OCTOBER 18.—**Lancashire and Surrey.**—BUILDING.—(1) Erection of new post office at St. Annes-on-Sea; (2) new room at Research Institute, Addlestone, for the Commissioners of H.M. Office of Works. Contracts Branch, H.M. Office of Works, King Charles-street, London, S.W.1. Deposit £1 1s. in each case.

✱OCTOBER 19.—**Surrey.**—CONSTRUCTION AND ALTERATION.—Construction of the foundations for the extension of the existing engine house, boiler house, ashes subway, alterations to existing works, drainage, &c., on land fronting on to Hurst-road at Walton-upon-Thames, for the Metropolitan Water Board. Chief Engineer, Room 201, 173, Rosebery-avenue, Clerkenwell, E.C. 1. Deposit £5.

OCTOBER 20.—**Barnoldswick.**—PAINTING.—For painting at Barnoldswick Rainhall-road Council School, for the West Riding E.C. Education Architect, County Hall, Wakefield.

OCTOBER 20.—**Edlington.**—HOUSES.—Erection of two houses on a site on the main road between Edlington New Village and Warmsworth, for the West Riding E.C. West Riding Education Architect, County Hall, Wakefield.

OCTOBER 20.—**Manchester.**—EXTENSION.—Extension of the gas stove repair department, Gleden-street, for the T.C. City Architect, Town Hall, Manchester. Deposit £1 1s.

OCTOBER 20.—**Stockbridge.**—CONVERSION OF OFFICES.—Conversion of offices at Stockbridge Council School, for the West Riding Education Committee. West Riding Education Architect, County Hall, Wakefield.

✱OCTOBER 20,-21.—**Gloucester.**—BUILDING.—Erection of a public convenience in St. John's-lane, Gloucester, for the Corporation. City Surveyor, Gloucester Corporation, Guildhall, Gloucester. Deposit £2.

OCTOBER 24.—**Hendon, N.W. 4.**—DWELLINGS.—For the completion of certain artizans' dwellings at Brent-hill Farm Estate, for the U.D.C. Mr. George Hornblower, architect, 2, Devonshire-terrace, Portland-place, W. 1. Deposit £10 10s.

OCTOBER 24.—**Orsett (Essex).**—HOUSES, ROADS AND PATHS.—Erection of 24 houses, together with roads and paths, fencing and drainage, at West Thurrock, Essex, for the R.D.C. Clerk to the Council, Council Offices, 2, Orsett-road, Grays, Essex. Deposit, £5.

✱OCTOBER 26.—**Brentwood, Essex.**—CLEANING AND PAINTING.—Cleaning and painting works at High Wood, Brentwood, Essex, for the Metropolitan Asylums Board. Office of the Board, Embankment, E.C.4. Deposit £1.

NOVEMBER 5.—**Gateshead.**—BRIDGE.—Erection of the superstructure of a bridge on the new Bensham Curve, Gateshead, over Lobley Hill-road, for the North Eastern Railway Co. Mr. C. F. Bengough, Chief Engineer, York

NO DATE.—**Kingsclere.**—REPAIRS TO SPIRE.—For the repair of the spire of St. Paul's Church, Kingsclere Woodlands. Rev. W. De la Bere, Woodlands Vicarage, Newbury.

FURNITURE, MATERIALS, etc.

OCTOBER 8.—**Bedlingtonshire.**—ROAD MATERIALS.—Supply of whinstone and tarred slag to the U.D.C. Mr. J. E. Johnston, Surveyor, Bedlington.

OCTOBER 11.—**Carshalton.**—ROAD MATERIALS.—Supply of 200 tons of 2 in. and 1½ in. tarred slag macadam and steam-rolling, hire of a steam-roller and scarifier. Mr. W. Willis Gale, Surveyor, Offices, The Square, Carshalton.

OCTOBER 11.—**Salford.**—WOOD BLOCKS.—32,400 wood blocks, 9 in. by 3 in. by 6 in. creosoted deal, also 500 square yards 2½ in. concrete flags. Borough Engineer, Town Hall, Salford.

OCTOBER 12.—**London.**—LOCKS.—Supply to the Commissioners of His Majesty's Works of locks. Controller of Supplies, H.M. Office of Works, &c., King Charles-street, S.W. 1.

OCTOBER 17.—**London.**—PLATE GLASS.—Supply to the Commissioners of H.M. Works of plate glass. Controller of Supplies, H.M. Office of Works, &c., King Charles-street, S.W.1.

OCTOBER 19.—**London.**—MATERIALS.—Supply to the Bombay, Baroda, and Central India Railway Company of (1) red and white lead, (2) canvas, bunting, &c., (3) disinfectant fluid, (4) lamps, lamp fittings, and miscellaneous glass, (5) paints, &c. Charges: 1 and 2, 20s.; for 3 and 4, 10s.; and for 5, 5s. Mr. S. G. S. Young, Secretary, The White Mansion, 91, Petty, France, Westminster, S.W. 1.

ENGINEERING, IRON AND STEEL

OCTOBER 8.—**Eastbourne.**—HEATING.—Heating installation at St. Andrew's Presbyterian Mission Church, Hampden Park, Eastbourne. Mr. W. F. Jordan, 125, Whitley-road, Eastbourne.

OCTOBER 10.—**Australia.**—TRUSS SPANS.—Supply of three steel truss spans for bridge over River Murray, for the Victorian Railway Commissioners. Department of Overseas' Trade, 35, Old Queen-street, S.W.

OCTOBER 10.—**Burnley.**—BRIDGE.—Construction of road bridge over colliery tramway. Oswald-street, for the T.C. Gas Department. Mr. J. P. Leather, Gas Engineer, Burnley.

OCTOBER 11.—**Leeds.**—LIGHTING SET.—Supply and erection of an electric lighting set, comprising 4 B.H.P. oil engine, 3 k.w. d.c. generator, and accumulators, at the Leeds Sanatorium, Gateforth, for the T.C. Town Clerk's Office, 26, Great George-street, Leeds.

OCTOBER 11.—**London.**—RAILWAY MATERIALS.—Supply to the High Commissioner for India of 25 lbs. rails and fishplates. Director-General of Stores, India Office, Whitehall, S.W.1.

OCTOBER 13.—**London.**—RAILWAY MATERIALS.—Supply to H.E.H. the Nizam's Guaranteed State Railways Co., of 400 steel tyres for carriages and wagons. Mr. F. Adams, Secretary, Winchester House, E.C.2. Charge 10s.

OCTOBER 13.—**St. Austell.**—PUMPS.—Supply of one double set of three-throw ram pumps (second-hand), &c., for the R.D.C. Mr. A. T. Green, Surveyor, Grant's-walk, St. Austell.

OCTOBER 14.—**Crossgates.**—ELECTRIC INSTALLATION.—Electric lighting work at new school, Crossgates, for the Fife Education Authority. Mr. C. R. Douglas, Ordained Surveyor, 15, East Port, Dunfermline. Deposit £1 1s.

OCTOBER 15.—**Harrogate.**—BOILER.—Taking down existing boiler and provision and fixing of a new cast-iron sectional boiler at Harrogate Secondary School. Education Architect, County Hall, Wakefield.

OCTOBER 15.—**Wallasey.**—LANDING STAGE.—Construction of new floating goods landing stage, approximately 320 ft. in length and 80 ft. in breadth, for the T.C. Messrs. Wilton & Bell, engineers, Westminster Chambers, 1, Crosshall-street, Liverpool. Deposit £5 5s.

OCTOBER 17.—**Glasgow.**—FIRE ENGINES.—Supply to the T.C. of two new petrol motor pump fire engines. Mr. William Waddell, Chief Officer of the Fire Brigade, 33, Ingram-street, Glasgow.

OCTOBER 18.—**Bristol.**—GALLERY.—Construction, &c., of an overhead gallery for use in connection with the Royal Edward Cold Stores, Avonmouth Dock, for the Dock Committee. Mr. Thomas A. Peace, Engineer, Avonmouth Dock. Deposit £2.

OCTOBER 19.—**Bideford.**—WATERWORKS.—(1) Masonry dam for a reservoir to contain 27,000 galls; (2) three sand filters, each 30 ft. by 40 ft., to filter 56,000 galls. per 24 hours; and clear water well; (3) 6 in. cast-iron main, 900 yards in length; (4) existing high level tank increased in capacity from 75,000 to 150,000 galls.; and a (5) suction gas pumping installation, capable of pumping 14,000 galls. per hour against a head of 240 ft., for the U.D.C. Messrs. St. George-Moore & La Trobe-Bateman, 91, Victoria-street, Westminster, S.W.1. Deposit £5.

✱OCTOBER 26.—**Wokingham, Berks.**—IRON STAIRCASE.—Erection of iron fire-escape staircase, &c., to staff quarters at Pinewood, near Wokingham, Berks., for the Metropolitan Asylums Board. Office of the Board, Embankment, E.C.4. Deposit £1.

OCTOBER 31.—**Australia.**—BRIDGE WORK.—Supply of metal work for lift bridge over the Murray River, for Department of Public Works, Sydney. Department of Overseas Trade, 35, Old Queen-street, S.W.

OCTOBER 31.—**Madras.**—C.I. PIPES, &c.—Supply and delivery of cast-iron pipes, special castings, sluice valves, &c. for Madras Corporation. Messrs. Mansergh & Sons, agents, 5, Victoria-street, Westminster, S.W 1. Deposit Rs. 500.

NOVEMBER 14.—**Leeds.**—TANK, &c.—Design and construction of an elevated water-tight reinforced concrete tank and pump house, at Moortown, for the T.C. Mr. Charles G. Henzell, Waterworks Engineer, 26, Great George-street, Leeds. Deposit £1.

NOVEMBER 16.—**Littleton (Middlesex).**—PUMPS.—Supply and erection of pumping machinery at Littleton, Middlesex, for the Metropolitan Water Board. Mr. Henry E. Stilgoe, Chief Engineer, 173, Rosebery-avenue, E.C. 1. Deposit £3 3s.

DECEMBER 20.—**Costa Rica.**—WHARF.—Construction of reinforced concrete wharf at Puntarenes, for the Public Works Department.—Department of Overseas Trade, 35, Old Queen-street, S.W.

DECEMBER 31.—**Siam.**—STEELWORK.—Supply of superstructures of steel railway bridges, for the Siamese State Railways. Messrs. C. P. Sandberg, 40, Grosvenor-gardens, London, S.W. 1. Charge 10s

ROAD, SANITARY, AND WATER WORKS.

OCTOBER 10.—**Blaydon.**—ROADS.—Making up St. Cuthbert's-place, School Back-street, South Back Cuthbert's-place, Aidan-street, Oswin-street, East and West Back Oswin street and Rectory Back-street, all at Blaydon, for the U.D.C. Surveyor, Blaydon. Deposit £1 1s.

OCTOBER 10.—**Blaydon.**—ROADS.—Making up Pear Tree-road, Access-road, South Back Derwent-street, Derwent-street, Back Bewick-road, and Derwent-street, and Back River-view and Chopwell-road, for the U.D.C. Surveyor, Blaydon. Deposit £1 1s.

OCTOBER 10.—**Cramlington.**—SEWER.—Laying of about 600 lineal yards of 12 in. sanitary pipe sewer at Shankhouse, for the U.D.C. Mr. A. S. Dinning, Engineer, 21, Ellison-place, Newcastle-on-Tyne.

OCTOBER 11.—**Castle Ward.**—SEWERAGE WORKS.—Construction of sewage disposal works at Fawdon, near Coxlodge Station, for the R.D.C. Mr. James Jameson, Secretary Inspector, Fernlea, Ponteland.

OCTOBER 11.—**Newton Abbot.**—WATERWORKS.—Supplying and laying about 1,400 yards of 3 in. cast-iron water mains, construction of a reservoir to contain about 11,000 galls. of water, for the R.D.C. Mr. S. Segar, Engineer, 37. Devon-square, Newton Abbot. Deposit £2 2s.

OCTOBER 14.—**Edinburgh.**—ROADS, &C.—(1) The construction of roads and footpaths; (2) Fencing, gates, &c., in connection with housing sites at London-road and Iona-street, for the T.C. Director of Housing, 1, Parliament-square, Edinburgh.

OCTOBER 15.—**Renfrew.**—SEWERS, &C.—Construction of sewers, roads, &c., at (1) Jenny Lind (Thornliebank) Housing Site, and (2) Gateside (Barrhead) Housing Site, for the Renfrew C.C. Mr. Jas. M. M'Callum, District Clerk, 15, West George-street, Glasgow. Deposit £1 1s.

OCTOBER 17.—**Kirkby-in-Ashfield.**—SEWAGE WORKS. Extension of the sewage disposal works, for the U.D.C. Messrs. Elliott & Brown, Engineers, Burton Buildings, Parliament-street, Nottingham. Deposit £2 2s.

NOVEMBER 17.—**Uruguay.**—**WATER AND DRAINAGE WORKS.—Construction of water and drainage works at San Jose. Department of Overseas Trade, 35, Old Queen-street, S.W.**

Competitions.

(See Competition News, page 428.)

Auction Sales, Tenders, etc.

✱OCTOBER 5.—**London, S.W.**—Messrs. Veryard & Yates will sell, at 255, Clapham-road, S.W., without reserve, new and second-hand timber and building materials. Auctioneers, 365, Norwood-road, S.E. 27.

✱OCTOBER 12.—**Liverpool.**—Messrs. Alfred Dobell & Co. will sell, by order of the Exors. of the late Mr. William Gunning, seasoned timber of various kinds. Auctioneers, Liverpool, and 10, Arthur-street, E.C. 4.

OCTOBER 12.—**Sussex.**—Messrs. Harris & Gillow will sell by direction of the Disposal Board, at No. 4, Battalion Lines, Shoreham Camp, Shoreham-by-Sea, Sussex, camp buildings, building materials, camp equipment, and a number of effects. Auctioneers, 21, North Audley-street, London, W.1., and at Shoreham-by-the-Sea.

✱OCTOBER 12, 13, AND 14.—**Coventry.**—Messrs. Charles B. Odell will sell, by direction of the Disposal Board, at C.S.D. Depot 87, H.M. Filling Factory No. 21, Holbrook-lane, Coventry, machinery and plant, electric motors and equipment, railway locomotives, timber, and builder's plant, office furniture, &c. Auctioneers, 53, Hertford-street, Coventry.

OCTOBER 19 AND 20.—**Portsmouth.**—Messrs. Bowler & Blake will sell, at the Yard, Goldsmith's-avenue, Portsmouth, by instructions from Messrs. H. A. Evans, builders' merchants, Goldsmith's-avenue, Portsmouth, a large quantity of surplus stock, timber, roof trusses, hoop iron, ironmongery and brass foundery, tools for all trades, and numerous other lots. Auctioneers, Fratton Bridge, Portsmouth.

OCTOBER 20.—**Leicester.**—For sale by private treaty the business of an asphalter formerly carried on by William Nunn, deceased. Mr. P. W. Lawrie, Incorporated Accountant, 5, Granby-street, Leicester.

Public Appointments.

✱OCTOBER 14.—**Middlesex.**—Experienced Clerk of Works required in Surveyor's Department for Housing Scheme. Mr. H. J. Baker, Clerk to the Heston and Isleworth, U.D.C., Council House, Hounslow.

✱OCTOBER 17.—**Bournemouth.**—Road Foreman, fully qualified, to supervise road making, maintenance and cleansing, by the B.C. Mr. F. P. Dolamore, F.S.I., Borough Engineer, Town Hall, Bournemouth, endorsed "Road Foreman."

✱NO DATE.—**Colombo, Ceylon.**—Chief Inspector, Sanitation Department, required by the Colombo Municipal Council. Crown Agents for the Colonies, 4, Millbank, Westminster, London, quoting M.11,083.

✱NO DATE.—**Nigeria.**—Foreman of Works required, at once, by the Government of Nigeria, for the Public Works Department. Crown Agents for the Colonies, 4, Millbank, Westminster, S.W., quoting M/11809.

✱NO DATE.—**Zanzibar.**—Architectural Assistant required by the Government of Zanzibar for service in the Public Works Department. Crown Agents for the Colonies, 4, Millbank, Westminster, S.W. 1, quoting M/Zanzibar 11,032.

THE "VENTIHETA."

The makers of the "Ventiheta" point out that the model illustrated in our last issue refers only to the special "Ventiheta" suitable for garages, which is cemented to a brick base and lighted from outside the building so as to conform with insurance companies' regulations. This type must not be confused with the latest model shown here, which has been designed to be in harmony with modern home decoration. It is easy to install and use, and low in fuel consumption where gas, oil or electricity is employed, and in addition to efficiently heating a room ensures a thorough air circulation. The manufacturers are Messrs. Ventiheta (United Kingdom), Ltd., of 311 and 324, Old-street, E.C. 2.

Jersey Building Trade Strike.

Following a conference on the wage question, employers in the building and allied trades at Jersey, it is reported, last week sent a circular to the men insisting on a reduction forthwith of 2d. per hour for unskilled labour. One of the reasons advanced for this action is that hundreds of unemployed are offering their services at 35s. weekly against £2 13s. now paid. The men refused to accept the reduction, and declared their intention of ceasing work.

Wages in the Evesham District.

At a meeting of the Evesham Branch of the National Federation of Building Trade Operatives last week, the action of the Evesham builders in publishing notices regarding the 1d. per hour reduction was discussed. It was pointed out that the employers were not parties to the national wages agreement, and that the reduction would bring the rate lower than the national standard for the Evesham district. It was decided to protest against the wages being reduced without the operatives being consulted, and to press for a proper working agreement.

Fire Resistance of Reinforced Concrete.

Writing with reference to the recent fire at one of the largest stores in Paris, Messrs. Edmond Coignet, Ltd., state that the fire-resisting qualities of reinforced concrete are not sufficiently recognised by architects or their clients. "It has been argued," they state, "that by encasing steel members in concrete or other fire-resisting material steel construction would become as fire resistant as reinforced concrete. In many disastrous fires, where steel structures were encased in this manner, however, the casings proved of no use whatever, probably on account of the fact that the area of steel in the girders and stanchions is considerable, producing a collapse of the casing and disruption at the joints, which cannot happen in the case of a reinforced concrete building."

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PROPOSED NEW BUILDINGS AND OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

ASHINGTON.—Nearly £70,000 has been given by a prominent layman in the Wesleyan Methodist movement for providing mission halls in large industrial centres throughout the country, and £10,000 of this benefaction has been placed at the disposal of the Rev. J. E. Reilly, one of the circuit ministers stationed at Ashington.

BATH.—Plans approved: Connection to sewer, dressing rooms and lavatories, Football Ground, Lambridge; drainage, Newbridge Inn, Lower Bristol-road; bungalow, Frome-road; garage, Bruton-avenue; garage, St. Stephen's-road; rebuilding of premises, Canal Bridge, Pulteney-road.

BLACKPOOL.—Plans passed by T.C.: Two houses, Bampton-road, for A. R. Palethorpe; six houses, Sussex-road, for J. G. Harrison; three houses, rear of Cunliffe-road, for S. Crossley; additions to bungalow, off White gate-drive, for C. W. Callis; three houses, Highfield-road, for J. Lund; two bungalows, Westmorland-avenue, for A. & H. Saltonstall; five houses, Ord-avenue, for E. & J. England; two houses, Leicester-road, for T. A. Thackray; bungalow, St. George's-avenue, for J. Gregson; two houses, Portland-road, for J. Gregson; house, Central-drive, for E. Saville; bungalow, off Red Bank-road, for J. England & Son; five houses, Red Bank-road, for E. England; bungalow, Piccadilly, for J. Knowles; bay window, 10, Lincoln-road, for W. Ward; bay window, "Hill Crest," Lincoln-road, for A. Fletcher; alterations, 5, Queen-square, for J. Fielding & Sons; alterations, 25, Queen-street, for M. Shaffer; motor garage, 7, King George-avenue, for T. B. Finney; garage, Clifton-grove, for A. Turner; stores, Palatine-road, for A. Hartley; workshop and two greenhouses, Cunliffe-road, for S. Crossley; house and garage, Lightbown-avenue, for Lightbown & Dent; six houses, Cleator-avenue, for G. Hodgson; new streets, Ord-avenue, for E. & J. England; garage and workshop off Raikes-road, for E. Sutcliffe; alterations to laundry, New-road, for Blackpool Princess and Ribble Laundries, Ltd.

BOURNEMOUTH.—Plans passed by T.C.: Motor house, "York Cottage," Beech-avenue, for Mr. A. Ives; additions, 26, Linwood-road, for Miss Oldham; additions, 7, Talbot-avenue, for Miss Jenkins; additions, Royal Bath Hotel, Bath-road, for the Company; motor house, rear of 10, Norwich-avenue, for Mr. S. R. Wilkinson; motor house, Bracken-road, for Messrs. F. A. Grigg & Son; motor house, Soberton-road, for Dr. H. Holloway; two motor houses, Grand-avenue, for Mr. A. Ives; alterations and additions to premises, Old Christchurch-road, for the London County Westminster and Parr's Bank, Ltd.; motor house, "Staffa," Nairn-road, for Mr. C. G. Knight; verandah and tool house, Queen's Park North-drive, for Mr. W. W. Baker; conversion into flats, "Woodend," Rushton-crescent, for Mrs. Sinclair; house, Pine-road, for Messrs. F. Hoare & Sons; two houses, Seaward-avenue, for Mr. A. Rendall; two houses, Queen's Park South-drive, for Mr. J. Stacey; four bungalows, Queen's Park-avenue, for Mr. J. Drewitt; two houses, Queen's Park-avenue, for Mr. J. Drewitt; house, Portman-crescent, for Messrs. Nightingale & Burridge; house, Portman-crescent, for Messrs. Nightingale & Burridge; house, Stourcliffe-avenue, for Messrs. Lawrences; three houses, Rutland and Green-roads, for Mr. A. Barnes; house, Coronation-avenue, for Mr. A. Vine; four houses, Bengal-road, for Mr. S. Harris; house, Queen Mary-avenue, for Mr. S. Way; house, Bishop-road, for Mr. A. E. Wareham; house, Coronation-avenue, for Mr. H. Mitchell; two houses, Heathwood-road, for Messrs. Hawkins Bros.; house, Strouden-road, for Mr. Grocey; house, Granville-road, for Mr. G. Cooper; motor house, 24, Glen-road, for Mr. H. Wilson; conversion of store into dwelling house, Warwick-road, for Mr. F. Iles; house, Kimberley-road, for Mrs. S. A. Stephens; house, Cecil-avenue, for Mr. J. Martin; two houses, Hillbrow-road, for Mr. C. Trent; five houses, St. Alban's-crescent, for Mr. A. H. Jackson; three houses, Mortimer-road, for Messrs. Hayward & Marshall; three houses, Mortimer-road, for Messrs. Hayward & Marshall; six houses, Mortimer-road, for Messrs. Hayward & Marshall; house, Queen's Park North-drive, for Mr. F. W. Burton; three houses, Cecil-avenue, for Mr. A. Harris; two houses, 66, Heatherlea-road, for Messrs. Pearson & Burrell; house, 3, Alyth-road, for Mr. A. Barnes; two houses, Green-road, for Mr. S. Coul; house, King George-avenue, for Mr. C. Miller; conversion into flats, 89, Southbourne-road, for Mrs. Latcham; semi-bungalow, Cecil-avenue, for Mr. C. Jensen; house, Iddesleigh-road, for Mr. J. A. Nethercoate; additions, 27, Dean Park-road, for Mr. W. B. Lowry; house, Gresham-road, for Mr. H. W. King; additions, 8, Castlemain-avenue, for Rev. H. Morton; house and shop, Cranleigh-road, for Mr. C. Butler; house, King Edward-avenue, for Mr. H. Mitchell; two bungalows, Charminster road and Charminster-avenue, for Mr. C. W. L. Jensen; house, King George-avenue, for Mrs. E. Elsworth; motor house, "Summerleigh," Chine Crescent-road, for Mr. J. A. Sturton; house, Cecil-avenue, for Mr. C. W. L. Jensen; additions, 3, Hawkwood-road, for Mr. Halliday; balcony, "Knolebury," Knole-road, for Miss Burgess; conversion into flats, 94, Christchurch-road, for Mr. A. D. Beynon; motor house, "Cliftcote," Studland-road, for Mr. W. E. Smith; motor house, "Zaremba," Percy-road, for Mr. G. Roe; two houses, Bodorgan-road, for Messrs. G. E. & W. R. J. Lambert; motor house, 2, Beach-avenue, for Mr. T. F. Farren; additions, "Petersfield," 106, Richmond Park-road, for Dr. S. C. Lawrence; house and shop and lock-up shop, corner of Wimborne-road and Bloomfield-avenue, for Mr. H. C. Barnes; store, Nortoft-road, for Messrs. Idris Co., Ltd.; stores, &c., "Blanchland," Denmark-road, for Mr. W. O. Hutchinson; covered way, 264, Christchurch-road, for Mr. H. J. Calloway; house and garage, Keswick-road, for Mr. B. Bayes.

BRIDLINGTON.—Plans passed by T.C.: Two houses, Cardigan-road, by Mr. F. R. Waller for Mr. G. H. Eckles; garage, 30, Victoria-road, for Mr. C. Radford; garage, Martin-road, Mr. J. H. Hudson, for Mr. C. Hiscock.

BUCKIE.—Plans passed: Semi-detached villas, Cliff-terrace, for Messrs. G. & J. Smith.

CAMBRIDGE.—Plans passed by T.C.: Additions, "Homefield," Cavendish-avenue, for Mr. S. Lamb; workshops, offices, &c., Glisson-road, for Mr. J. R. L. Bennett; bathroom, 3, Camden-place, for Mr. M. D. Bradford; workshop, Roch-road, for Mr. F. G. Mansfield; additions, Storeys Way, for Mrs. Smith; lecture room, St. Peter's College, for the authorities; rebuilding of back portion of "Inch-Ma-Home," Adams road, for Dr. L. Cobbett; house, Milton-road, for Mrs. Mortlock; two houses, Storeys Way, for Mr. H. C. Buttress; two houses, Hills-road, for Mr. H. C. Buttress; additions, 70, Cherry Horton-road, for the Cherry Horton Liberal Club; sanitary additions, 62, Bateman-road, for the Governors of the Perse School; garage, Hills-road, for Mr. J. S. Conder.

CHAPEL-EN-LE-FRITH.—Plans passed by R.D.C.: Six timber-built bungalows, The Horderns, Chapel-en-le-Frith, W. A. Hudson, owner; garage for steam wagon, Higher Crossings, Chapel-en-le-Frith, S. Vernon, owner; garage at Moultrassie, Hope, H. J. Allen, owner; garage, Manchester-road, Chapel-en-le-Frith, H. W. Richards, owner.

CHESTERFIELD.—Plans passed by T.C.: Additions and alterations to the "Old White Horse Inn," Old Whittington, for Messrs. A. H. Smith & Co., Sheffield; additions and alterations to "Three Horse Shoes," Chatsworth-road, Brampton, for Scarsdale Brewery Co.; addition of four class rooms, &c., to Gospel Mission Hall, Old-road, Brampton; addition to house, Linden-avenue, for Mrs. Watt; house in Whitecote-lane, Walton, for Mr. A. H. Harrison; garage, Spencer-street, for Mr. Geo. Webber: additions to Butchering Department, Co-operative Society premises, West Bars, for the Chesterfield Co-operative Society; garage, Tennyson-avenue, for Mr. Wright; bungalow, The Brushes, Sheffield-road, for Mr. John Soar, Nottingham; conversion of stable into garage, off Chatsworth-road, for Mr. W. Thacker; house, Chatsworth-road, for Mr. Percy Shaw, Old-road, Chesterfield; three cottages, Spring Vale, Spital-lane, for Messrs. J. Collis & Son, Saltergate.

EDINBURGH.—In order to facilitate and encourage building on the area between Granton and Davidson's Mains, a uniform drainage scheme has been prepared by the Burgh Engineer and submitted to the Streets and Buildings Committee. A general approval has been given to the scheme, and detailed plans ordered. —Five building warrants were granted by the Dean of Guild Court at its last sitting.—A proposal to provide an exhibition hall is before the Lord Provost's Committee, and it has been remitted to the Treasurer's Committee to consider the financial aspects.

GLOUCESTER.—Mr. C. G. Mitchell, Ministry of Health Inspector, has conducted an inquiry into an application made by the T.C. for sanction to borrow £9,842 for the purchase of property and for various works of road construction and improvement.

GREASBOROUGH.—Sanction to negotiating a £6,500 loan for the erection of a public hall, baths, and mortuary, has been given by the Ministry of Health to the U.D.C.

HINCKLEY.—Plans passed by the R.D.C. at its last meeting included a bungalow at Sketchley, for Mr. D. Moridge; cowshed at Barwell, for Mr. G. Geary; additions to factory at Barwell, for Messrs. H. Leader & Co.; alterations and additions at Earl Shilton, for the London County Westminster and Parr's Bank and a garage at Burbage, for Mr. L. Chamberlain.

ILKESTON.—Plans passed by T.C.: Bungalow, Wharncliffe-road, for the Rev. A. Copley; Office, Rutland-street, for Mr. Wm. Stevens; garage and petrol store, Manners-road, for the Anglo-American Oil Co., Ltd.; garage, 211 and 212, Nottingham-road, for Mr. R. C. Mace; club room, 141 and 143, Park-road, for the Larklands Constitutional Club; wooden store, Awsworth-road, for Mr. John Beardsley; parochial room, Factory-lane, for the Vicar and Churchwardens, Holy Trinity.

ILFORD.—Plans passed for U.D.C.: R. F. King, shed, 5, Toronto-road; F. Ainsworth, shed, 28, Richmond-road; C. F. Chipman, workshops, Buckingham-road; H. Wilson, sports pavilion at Old Blues' Sports Ground, London Playing Fields; G. A. Sharpe, 10 lock-up shops, Ilford Market; F. W. Hitchcock, coverway, 166, High-road.

KENDAL.—Plans approved by T.C.: Three houses, Gilling-gate, Messrs. J. W. Howie & Sons, owners (Mr. J. Stalker, architect); workshops in Old Post Office Yard, Highgate, Mr. Charles Simcock, owner.

LONDON (DEPTFORD).—Drainage plans passed by B.C.: At 9 and 10, The Broadway, for Messrs. Lavington, Ltd.; at 46 to 64, Hyde-street, for Mr. H. Hall; at 44 and 46, Reeston-street, for Mr. E. C. Cole.

LONDON (EAST HAM).—Plans approved by the B.C.: Silvertown Catholic Church, corner of Kennard and Newland-streets, for Mr. T. H. B. Scott; addition to factory of All-British Confectionery Co., for Mr. E. G. Wilks; tyre shop, Barking-road, Wall End, East Ham, for Messrs. E. W. Piercy & Son; pair semi-detached houses, 50 and 52, Monmouth-road, E.6, for Messrs. G. Mitchell & Sons; two houses, Vicarage-lane, for Mr. A. Tyler; two houses, Tilbury-road, for Messrs. J. Stokes & Sons; alteration of stable to garage at the rear of 484, Romford-road, for Mr. R. C. Turner Gordon; stable, Burges-road, for Mr. G. Helbing; lavatory accommodation Argyle Works, 2A, Malvern-road, for Messrs. Kain & Co.; alterations, 68, High-street North, East Ham, for Messrs. Davis & Emmanuel and Henry C. Hart; offices over 64, High-street North, East Ham, for Messrs. J. Stokes & Sons; alteration to shop, 33, High-street North, East Ham for Mr. W. Beattie.

LONDON (HAMMERSMITH).—Drainage plans passed by B.C.: At 117, Goldhawk-road, for Mr. E. T. Swinson; at 3, Percy-road, for Mr. W. Wilton; at 19, Ashchurch Park-villas, for Mr. J. G. Emms; at 28, The Grove, for Messrs. H. T. Bond (L. & S. W. Rly.); at Shepherd's Bush Empire, for Messrs. Davis, Bennett & Co.; at 87, Black Lion-lane, for Mr. F. C. Spiller; at 11, Boxmoor-street, for Messrs. W. Chapman & Sons; at 15, St. Peter's-square, for Mr. M. Dawson; at 127, Becklow-road, for Mr. W. A. Conway; at Hammersmith Metropolitan Station, for Mr. A. Wilson (Metropolitan Railway Co.); at 21, Brackenbury-road, for Mr. J. Kleeman; at 3, Gayford-road, for Mr. F. Munton; at 104, Netherwood-road, for Messrs. Chudleigh Bros.; at 11, Blacks-road, for Mr. A. H. Matthews; at 49, St. Stephen's-avenue, for Messrs. Brooks & Co.

NORTHAMPTON.—Plans passed by T.C.: Sanitary improvements, "Silver Cornet," Kerr-street, for Messrs. P. Phipps & Co.; factory alterations, Stockley and Vernon-streets, for Messrs. Frisby & Co.; sanitary alterations, Abington Church Parish Buildings, for the rector and churchwardens; store, 2, Langham-place, for Mr. J. Ponting; transformer chamber, Vigo Tannery, for the Vigo Tannery Co.; alterations, 21, Sheep-street, for the Pytchley Autocar Co.

PREESALL.—Plans have been passed for the erection of 40 bungalows by the U.D.C. It has been decided that a sewerage scheme shall be prepared for Preesall village.

PENRITH.—Plans passed by U.D.C.: Alterations, house, Wordsworth-street, for M. A. Grisenthwaite; alterations to premises, Middlegate, for Mr. W. Callan.

ROCHDALE.—Plans passed by T.C.: John Bright & Bros., Ltd., transformer house and switch room, Healey Mill; W. Tweedale, tool house, Brooklands, Bury-road; Mitchell & Son, warehouse, Oak Mill, Bridge-street; Kelsall & Kemp, alterations, public Hall; John Barton (Rochdale), Ltd., w.c. and lavatory, Pagan-street; Whiteheads (Rochdale), Ltd., transformer house, Farrow-street.

ROTHERHAM.—The R.D.C. has instructed the Surveyor to get out estimates for new offices and boardroom at South-terrace, Rotherham.—The Council has been granted authority to proceed with a further 20 non-parlour houses at Brinsworth, at a cost of £720 per house.

SALFORD.—Plans passed by T.C.: Construction of verandah to Marlborough Cinema, St. James'-road, Broughton; chimney and additions to works, Cow-lane, Salford; garage, Knott-street, Salford; alterations to premises, 45 and 47, Oldfield-road, Salford; rope walk, Athole-street, Pendleton; additions to Zama Waterproof Works, Florin-street, Salford; construction of roof over smithy, East Charles-street, Salford; front wall to building, East Ordsall-lane, Salford; food storage accommodation to dwellings, Queen-street, Rolla-street and Starkey-street, Salford; alterations to dwelling house, Waterpark-road, Broughton; sanitary accommodation, Blackfriars Inn, Blackfriars-road, Salford; sanitary accommodation, Prince of Wales Hotel, Oldfield-road, Salford.

WALLASEY.—Plans passed by T.C.: Warehouse and show rooms, Field-road, for Mr. H. J. Christian; garage and workshop, Church-lane, for Mr. W. E. Bamber; alterations and additions, 163, Seabank-road, for the London Joint City & Midland Bank, Ltd.; verandah, 6, Regent-road, for Mr. W. K. Gatley; shop and office, 128, Rake-lane, and 2, Zig-zag-road, for Mr. C. Wherly; garage, 2, Colvine-road, for Mr. G. Edwards; van shed, Wallasey-road, for Mr. Sam Pritchard; garage, 3, Shelton-road, for Mr. D. Lyon; shed, 10, Tilston-road, for Mr. G. Byrom; extension to workshop, Wallasey-road, for C. F. Rymer, Ltd.; motor shed, 26, Molyneux-drive, for Mr. P. B. Granell; house, Beaufort-drive, for Mr. J. B. Jones.

WOKING.—Proposals for the enlargement of the Victoria Cottage Hospital are under consideration, and a scheme will shortly be submitted to a public meeting.

FIRES.

FORGUE.—The buildings at Forgue, Aberdeenshire, belonging to Mr. James M'Intosh, general merchant and purveyor, have been destroyed by fire.

FORT WILLIAM.—A fire has occurred in the large block of buildings owned by Morton's Trustees in High-street.

HAWICK.—A fire has occurred at the joiners' shop belonging to Messrs. Scott, Whitlaw Haugh, and damage was done to an estimated amount of £2,000.

HINCKLEY.—Over £100,000 damage has been done by a fire which totally destroyed the extensive hosiery manufacturing works of Bennett Brothers, near Hinckley.

LEEDS.—A part of the huge soap manufacturing works of Joseph Watson & Sons, Leeds, a subsidiary of Lever Bros., was destroyed by fire on Saturday night.

MYERSCOUGH.—Damage to the extent of about £4,000 has been caused by a fire at Mr. John Rhodes's Lee Farm, Myerscough, near Preston.

NOTTINGHAM.—A fire which caused damage estimated at £90,000 has occurred in Hyson Green district, where the soap manufacturing and glycerine refining works of Gerard Bros., Ltd., were almost destroyed.

SHEFFIELD.—Damage estimated at £1,500 has been caused by a fire which has occurred at the works of Messrs. Leadbeater & Scott, steel manufacturers, Penistone-road.

* See also our List of Contracts, Competitions, etc

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue various revisions have been made.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	5 0 0

Per 1000, Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons	3 15 0	Best Blue Pressed Staffordshire	11 11 6
Best Stourbridge Fire bricks	12 14 0	Do. Bullnose	12 1 6
		Blue Wire Cuts	9 14 0
GLAZED BRICKS—			
Best White, Ivory, and Salt Glazed Stretchers	28 10 0	D'ble Str'tch'rs	37 0 0
		D'ble Headers One Side and two Ends	34 0 0
Headers	28 0 0		38 0 0
Quoins, Bullnose and 4½in. Flats	25 0 0	Two Sides and one End	39 0 0
		Splays and Squints	36 10 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	s. d.		
Thames Ballast	16 6	per yard,	delivered 2 miles radius Paddington.
Pit Sand	21 0	" "	
Thames Sand	21 6	" "	
Best Washed Sand	21 6	" "	
¾ in. Shingle for Ferro-Concrete	21 0	" "	
¼ in. " "	22 0	" "	

Per ton, delivered in London area.

	£ s. d.		£ s. d.
Best Portland Cement	4 3 6	..	4 9 0

76/6 alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above	..	..	10 0
Best Ground Blue Lias Lime	2 19 8	at rly. depot.	

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 3d. each and credited at 2s. each if returned in good condition within three months.

Grey Stone Lime	7/6 per ton delivered.
Stourbridge Fireclay in s'cks	4/6 per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R.. per ft. cube	3 2½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R.. per ft. cube	3 5½
Do. do. delivered on road wagons at Nine Elms Depot	3 6½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L.& S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 11½
Do. do. delivered on road wagons at above stations, per ft. cube	5 0½
White basebed, 3d. per ft. cube extra.	
NOTE.—½d. ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.	
YORK STONE, BLUE—*Robin Hood Quality.* Delivered at any Goods Station London.	s. d.
Scappled random blocks ..... Per Ft. Cube	14 5
6 in. sawn two sides landings to sizes (under 30 ft. super.) ..... Per Ft. Super	9 0
6 in. rubbed two sides, ditto ..... "	10 1
3 in. sawn two sides slabs (random sizes) "	3 11
2 in. to 2½ in. sawn one side slabs (random sizes) ..... "	2 5
1½ in. to 2 in. ditto, ditto ..... "	2 0
HARD YORK— Delivered at any Goods Station London.	
Scappled random blocks ..... Per Ft. Cube	9 3
6 in. sawn two sides landing to sizes (under 40ft. super.) ..... Per Ft. Super	8 6
6 in. rubbed two sides ditto ..... "	10 4
4 in. sawn two sides slabs (random sizes) "	4 11
3 in. ditto, ditto "	4 0
2 in. self-faced random flags .. Per Yard Super	12 2

WOOD.

GOOD BUILDING DEAL.

Inches	£ s.	
4 × 11	40 0	per standard
4 × 9	35 0	"
4 × 8	30 0	"
4 × 7	30 0	"
3 × 8	30 0	"
3 × 7	30 0	"
2½ × 7	25 0	"
3 × 6	25 0	"
3 × 11	37 10	"
2 × 11	38 0	"
3 × 9	35 0	"
2½ × 9	35 0	"
3 × 4½	25 0	"
2 × 4	22 0	"

PLANED BOARDS.

1 × 11	50 0	"
1 × 9	45 0	"

PLAIN EDGE FLOORING.

Inches		
½	20/–	per square
¾	22/6	"
1	25/–	"
1¼	32/–	"
1½	37/6	"

TONGUED AND GROOVED FLOORING.

Inches		
1	25/–	per square
1¼	32/–	"
1½	37/6	"

WOOD (*Continued*).

MATCHINGS (BEST).

Inches		
½	17/6	per square
¾	20/–	"
1	27/6	"

BATTENS.

Inches	s. d.	
½ × 2	3 3	per 100 ft.

SAWN LATHS.

Per bundle	0 4	0

Dry Wainscot Oak, per ft. super, as inch	0 2 6	to	0 3	0
½ in. do. do.	0 1 10½	to	0 2	6
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0 2 3	to	0 3	0
Cuba Mahogany	0 3 6	to	0 4	0
Teak (Rangoon, Moulmein or Java), per load	52 10 0	to	55 0	0
American Whitewood planks, per ft. cube	0 16 0	to	0 18	0
Best Scotch Glue, per cwt.	10 0 0	to	—	
Liquid Glue, per cwt.	5 8 0	to	6 15	0

SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

		£ s. d.
Best Blue Bangor Slates,	24 by 12	56 10 0
" "	22 by 12	46 0 0
First quality "	22 by 11	42 10 0
" "	20 by 12	42 0 0
Best Blue Portmadoc	20 by 10	36 10 0
" "	18 by 10	29 10 0
First quality "	18 by 9	24 5 0
" "	16 by 10	22 15 0
" "	16 by 8	18 0 0

TILES.

Per 1,000 f.o.r. London.

	£ s. d.
Best machine-made tiles from Broseley or Staffordshire district	7 15 0
Ditto hand-made ditto	8 10 0
Ornamental ditto	7 7 6
Hip and valley tiles (per dozen)	0 15 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—	£ s. d.
R. S. Joists, cut and fitted	22 0 0
Plain Compound Girders	25 0 0
Stanchions	27 0 0
In Roof Work	32 0 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £15 net value delivered direct from works. 5 per cent. less above gross discounts, carriage forward if sent from London stocks.)

	Tubes. ¼" to 2".	2¼" to 6".		Fittings. ¼" to 2".	2¼" to 6".
Gas	—30	—35	..	—30	—37½
Water	—20	—27½	..	—25	—35
Steam	—10	—20	..	—20	—32½
Galv'd Gas	—12½	—17½	..	—22½	—30
" Water	— 1½	— 8½	..	—17½	—27½
" Steam	+10	Nett.	..	—12½	—25

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6 fts.	5 10½	4 2	5 0
2½ in. " "	7 0½	4 7	6 3
3 in. " "	8 4½	5 0	7 6
3½ in. " "	9 3	6 3	8 9
4 in. " "	10 7	7 1	10 0

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts. plain	5 2	2 0	3 5
2½ in. " "	5 9	3 0	4 2
3 in. " "	6 8	3 8	5 6
3½ in. " "	7 9	4 4	6 5
4 in. " "	8 10	5 4	7 0

L.C.C. DRAIN PIPES.—9 ft. lengths. London Prices. per yd.: 4 in., 10/3. .. 5 in., 12/3. .. 6 in., 14/9.

IRON—	Per ton in London. £ s. d.		£ s. d.
Common Bars	18 10 0	to	19 10 0
Staffordshire Crown Bars — good merchant quality	19 10 0	..	20 10 0
Staffordshire "Marked Bars"	24 0 0	..	25 0 0
Mild Steel Bars	16 0 0	..	17 0 0
Steel Bars. Ferro-Concrete quality, basis price	16 10 0	..	17 0 0
Hoop Iron, basis price	24 0 0	..	25 0 0
" Galvanised	38 0 0	..	40 0 0
Soft Steel Sheets, Black— Ordinary sizes to 20 g.	23 0 0	..	25 0 0
" " " 24 g.	24 0 0	..	26 0 0
" " " 26 g.	26 0 0	..	27 0 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality— Ordinary sizes, 6ft. by 2ft. to 3ft. to 20 g.	30 0 0	..	32 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 22 g. and 24 g.	31 0 0	..	33 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 26 g.	33 0 0	..	35 0 0
Flat and Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 9ft. 20 g.	27 0 0	..	28 0 0
Ordinary sizes, 6ft. to 9ft. 22 g. and 24 g.	28 0 0	..	29 0 0
Ordinary sizes, 6ft. to 9ft. 26 g.	30 0 0	..	32 0 0

METALS (*Continued*).

Per ton in London.

	£ s. d.		£ s. d.
Sheets Galvanised Flat, Best quality— Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker	33 0 0	..	34 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	34 0 0	..	35 0 0
Best Soft Steel Sheets, 26 g.	36 0 0	..	37 0 0
Cut Nails, 3in. to 6in. (under 3in. usual trade extras.)	29 0 0	..	30 0 0

METAL WINDOWS—Standard sizes suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 3s. per foot super.

LEAD, &c.

Delivered in London.

	£ s. d.		£ s. d.
LEAD—Sheet, English, 4 lb. and up	35 10 0	—	—
Pipe in coils	36 0 0	..	—
Soil Pipe	38 10 0	..	—
Compo pipe	39 10 0	..	—

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills ..... per ton	19 0 0	..	—
Do., ex country, carriage forward ..... per ton	20 0 0	—	—
COPPER— Strong Sheet .... per lb.	0 2 3	..	—
Thin " .... "	0 2 4	..	—
Copper nails .... "	0 2 3	..	—
Copper wire .... "	0 2 4	..	—
TIN—English Ingots "	0 1 10	..	—
SOLDER—Plumbers' "	0 0 11	..	—
Tinmen's "	0 1 2	..	—
Blowpipe "	0 1 4	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft.
15 oz. fourths	4½d.	32 oz. fourths	10½d.
" thirds	5½d.	" thirds	1/–
21 " fourths	6½d.	Fluted, Obscured and	
" thirds	7½d.	Enamelled Sheet,	
26 " fourths	8d.	15 oz.	7d.
" thirds	9½d.	21 "	9d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
¼ Rolled plate	5½d.
⅛ Rough rolled	6½d.
¼ Rough rolled	7½d
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	7½d.
Ditto, tinted	8½d.
Rolled Sheet	6½d.
White Rolled Cathedral	6½ d.
Tinted do.	7½ d.

Cast Plate is ½d. extra on the price of rough rolled.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil	in pipes ..... per gallon	0 3 1
" " "	in barrels .... "	0 3 2
" " "	in drums .... "	0 3 4
Boiled "	in barrels .... "	0 3 6
" "	in drums .... "	0 3 8
Turpentine	in barrels ..... "	0 6 0
"	in drums (10 gall.) .... "	0 6 3
Genuine Ground English White Lead	per ton	59 15 0

(In not less than 5 cwt. casks.)

GENUINE WHITE LEAD PAINT—
"Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (in 14 lb. tins) not less than 5 cwt. lots ..... per ton delivered 82 15 0
Red Lead, Dry (packages extra) .. per ton 41 0 0
Best Linseed Oil Putty ..... per cwt. 0 17 6
Filocol ..... per cwt. 0 15 6
Size. X D Quality ..... fkn. 0 5 9

VARNISHES, &c.

		Per gallon. £ s. d.
Oak Varnish	Outside	0 15 0
Fine ditto	ditto	0 17 2
Fine Copal	ditto	1 1 6
Pale Copal	ditto	1 2 6
Pale Copal Carriage	ditto	1 4 0
Best ditto	ditto	1 14 6
Floor Varnish	Inside	0 19 0
Fine Pale Paper	ditto	0 18 0
Fine Copal Cabinet	ditto	1 2 6
Fine Copal flatting	ditto	1 0 6
Hard drying Oak	ditto	0 18 0
Fine Hard drying Oak	ditto	0 19 0
Fine Copal Varnish	ditto	1 0 6
Pale ditto	ditto	1 2 6
Best ditto	ditto	1 14 6
Best Japan Gold Size		0 12 6
Best Black Japan		0 18 0
Oak and Mahogany Stain (water)		0 17 6
Brunswick Black		0 11 9
Berlin Black		0 16 6
Knotting (patent)		1 16 0
French and Brush Polish		1 8 0
Liquid Dryers in Terebine		0 13 6
Cuirass Black Enamel		0 7 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

CURRENT PRICES FOR BUILDING WORK IN LONDON.*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	18	0
Add if in clay	„ „	1	10
Add for every additional depth of 6 ft.	„ „	1	4
Planking and strutting to trenches	per foot super	0	7
Do. to sides of excavation, including shoring	„ „	1	4

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6 ..	per yard cube	4)	0
Add if in underpinning in short lengths	„ „	9	6
Add if in floors 6 in. thick	„ „	3	10
Add if in beams	„ „	4	9
Add if aggregate 1 : 2: 4	„ „	14	3
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	„ „	4	3

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	47	10	0
Add if in stocks	„	11	17	6
Add if in Staffordshire blues	„	31	2	6
Add if in Portland cement and sand	„	4	0	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

		s.	d.
Neat flat strucks or weathered joint.....	„ „	0	0	3

ARCHES.

		s.	d.
Extra only to the price of ordinary brickwork :—			
Fair external in half brick rings	„ „	0	0	11½
Axed in stocks	„ „	0	1	11
Rubbed and gauged jointed in putty camber or segmental	„ „	0	6	8

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	„ „	0	1	6
Setting ordinary register grates and stoves	each	1	2	6
Setting kitchener, including forming flues, &c., with all necessary fire bricks	„	6	5	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	8	0
Three-quarter-inch vertical damp course	„ „	14	3
One inch on flats in two thicknesses.....	„ „	12	0
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	„ „	1	6

MASON.

		s.	d.
York stone templates fixed	per foot cube	19	9
York stone sills fixed	„ „	31	6
Bath stone and all labour fixed	„ „	15	0
Portland stone fixed	„ „	23	0

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails....	per square	98	0
Do. 20 in. × 10 in. Do. Do.	„	115	0
Do. 24 in. × 12 in. Do. Do.	„	117	6

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates .....per foot cube		7	0
Do. joists	„ „	8	0
Do. roofs, floors and partitions	„ „	9	3
Do. trusses	„ „	11	9

		¾″	1″	1¼″	2″
Deal rough close boarding	per sq.	42/-	48/-	56/-	85/-

		s.	d.
Flat centering for concrete floor, including struts or hangers .. „		63	0
Do. to beams .....per ft. sup.....		1	6
Centres for arches ..... „		2	0
Gutter boards and beams..... „		1	8

FLOORING.		¾″	1″	1¼″	1½″
Deal-edges shot	per sq.		54/-	64/-	74/-
Do. tongued and grooved	„		60/-	72/-	80/-
Do. matchings	„	45/-	55/-		
Moulded skirting, including backings and grounds .....per ft. sup.		2/-	2/3	2/9	3/3

SASHES AND FRAMES.		s.	d.
One-and-a-half moulded sashes or casements	per foot super	1	11
Two Do. Do. Do.	„ „	2	4½
Add for fitting and fixing	„ „	0	6
Deal-cased frames with 1 in. inner and outer linings, 1¼ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights; average size.....	„ „	4	11

DOORS.		1¼″	1½″	2″
Two-panel square framed .....per ft. sup.		2/6	2/9	2/11
Four-panel Do.	„	2/10	3/2	3/5
Two-panel moulded both sides	„	3/2	3/5	3/8
Four-panel Do. Do.	„	3/6	3/9	4/-

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	19	0

		1″	1¼″	1½″
Plain deal jamb linings framed	per ft. sup.	2/1	2/3	2/6
Deal shelves and bearers	„	1/10	2/-	2/1
Add if cross tongued	„	2d.	2d	2d.

STAIRCASES.

	1″	1¼″	1½″	2″	2½″
Deal treads and risers in and including rough brackets	3/2	3/10	4/5	—	—
Deal strings wrot in both sides and framed	4/3	4/6	—	—	—

		s.	d.
Housings for steps and risers	each	0	11½
Deal balusters, 1 in. × 1¼ in.	per ft. run.	0	9
Mahogany handrail; average 3 in. × 3 in.	„ „	6	0
Add if ramped	„ „	11	10
Add if wreathed	„ „	23	9

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/4½
Sash fasteners .....11½d.		Mortice locks	5/3
Casement fasteners	1/5	Patent spring hinges and letting in to floor and making good	19/-
Casement stays.....	1/2		
Cupboard locks	1/3		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	25	0
Plain compound girders	„	28	0
Do. stanchions	„	31	0
In roof work	„	36	0

RAIN-WATER GOODS.

		3″	4″	5″	6″
Half-round plain rebated joints ..	ft. run	1/11	2/4½	3/7	4/-
Ogee Do. Do. ..	„	2/4½	3/1	3/1(	4/9
Rain-water pipes with ears	„	2/9	3/7		
Extra for shoes and bends	each	4/4	5/11		
Do. stopped ends	„	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	„	2/2	2/7	3/1(	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	56	0
Do. Do. in flats	„	52	0
Extra labour and solder in coated cesspools	each	7	4
Welt joint	per ft. run.	0	6
Soldered seam	„ „	1	10½
Copper nailing	„ „	0	7

		½″	¾″	1″	1½″	2″	4″
Drawn lead waste	per ft. run	10d.	1/6	1/9	3/1	3/1(	
Do. service	„	1/5	1/11	2/3	3/6		
Do. soil	„						6/2
Bends in lead pipe	each					3/3	8/2
Soldered stop ends	„	1/2	1/8	2/1	2/10	3/6	
Red lead joints	„	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints	„	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws	„				14/7	19/6	
Bib cocks and joints ..	„	6/4	9/7	15/4	41/-		
Stop cocks and joints	„	15/4	17/2	25/8	64/-		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	3	2
Do. Do. Sirapite	„ „	3	7
Do. Do. Keen's	„ „	4	9
Add sawn lathing	„ „	1	11
Add metal lathing	„ „	3	4
Portland cement screed	„ „	2	9
Do. plain face	„ „	4	6
Mouldings in plaster	per 1 girth	0	3
One-and-a-half granolithic pavings	per yard sup.	6	7

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	1	4
26 oz. Do.	„ „	1	7
Obscured sheet	„ „	1	9
¼ in. rolled plate	„ „	1	0
¼ in. rough rolled or cast plate	„ „	1	1
¼ in. wired cast plate	„ „	1	7

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	1	5
Knotting and priming	„ „		11
Plain painting 1 coat	„ „	1	5
Do. 2 coats	„ „	2	3
Do. 3 coats	„ „	3	0
Do. 4 coats	„ „	3	10
Graining	„ „	2	10
Varnishing twice	„ „	2	4
Sizing	„ „	0	4
Flatting	„ „	0	9
Enamel	„ „	1	1(
Wax polishing	per foot sup.	0	10½
French polishing	„ „	1	8
Preparing for and hanging paper	per piece	2/- to	5/-

* These prices apply to new buildings only. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him *not later than Tuesday evening.*

*Denotes *accepted.* †Denotes *provisionally accepted.* ‡Denotes *recommended for acceptance.* §Denotes *accepted subject to modifications.*

CANNOCK.—For the construction of roads, sewers and fencing at Blackhalve-lane housing site, Essington, for the R.D.C. Mr. H. M. Whitehead, Director of Housing, Penkridge, Staffs.

†Poole Bros., Heath Town	£936 12 3
T. W. Marshall, Brewood	1,050 18 3
H. Holloway, Wolverhampton	1,099 2 1
Hodsons, Ltd., Nottingham	1,144 9 1
H. E. Holloway, Wolverhampton	1,159 7 2
W. Sharp & Son, Barton-under-Needwood	1,185 0 0
Andrew Blair, Lyell & Co., Birmingham	1,194 0 0
W. H. Rogers, Heath Town	1,297 5 4
Radford, Tebbs & Co., Derby	1,345 0 8
W. Greenley & Son, Leominster	1,490 12 0
A. Atkins, Lichfield	1,599 9 5
W. Muirhead, Macdonald, Wilson & Co., Birmingham	1,604 16 4
A. Graham & Sons, Huddersfield	1,620 2 0
A. Darrall, Chadsmoor	1,672 2 6
W. H. Lees, Darlaston	1,900 0 0

CHESTERFIELD.—For (*a*) erection of boilers at electricity works, and (*b*) brickwork in connection with erection, for the T.C. :—

*(*a*) Babcock & Wilcox	£1,614
*(*b*) Heath & Co.	1,253

CHESTERFIELD.—Erection of convenience in Queen's Park, for the T.C. :—

*Walter Bros.	£999 3

CHESTERFIELD.—For the erection of (*a*) 12 houses and (*b*) eight houses, for the T.C. :—

*J. H. S. Randall, Ltd., Sheffield—(*a*) £8,144, (*b*) £5,602.

CHESTERFIELD.—For painting work, for the T.C. :—

*W. C. Lund (painting interior of covered market)	£110 0 0
*W. C. Lund (painting exterior of Stephenson Hall)	88 0 0
*Walter Wade (painting exterior of Market Hall)	237 19 6

CLAYTON.—For the conversion of about 168 privies into water closets, for the U.D.C. Mr. James Wyld, Surveyor, Council Offices, Clayton, near Bradford :—

*William Pinder, Bradford.

DONCASTER.—For the erection of premises, for Messrs. Parkinson. Mr. J. B. Richardson, M.S.A., architect, Doncaster :—

Johnson & Moore	£1,797
Barker & Brewitt	1,855
Howell & Gilbert	2,026
J. H. Metcalf	1,791
Speakes & Son	1,684
Jenkinson & Sons	1,763
Provincial Building Co.	2,429
Firth & Whittington	1,575

EDMONTON.—For (1) the external painting, &c., Edmonton House; (2) the external painting, Chase Farm Schools, Enfield. Mr. E. Ridley, LL.B., Clerk, 77, Bridport-road, Edmonton, N.18 :—

(1) EDMONTON HOUSE.

To execute work by ordinary control.

No. of Tender.	Amount.	Time.
1	£5,500 0 0	26 weeks
2	2,675 0 0	12 „
3	2,547 14 9	12 „
4	3,020 0 0	13 „
5	8,214 0 0	13 „
6	4,600 0 0	16 „
7	3,725 0 0	16 „
8	3,971 0 0	20 „
9	5,880 0 0	20 „
10	3,450 0 0	16 „
11	3,450 0 0	16 „
12	3,580 0 0	16 „
13	3,725 0 0	Not stated
14	3,450 0 0	26 weeks
15	3,294 0 0	14 „
16	2,760 0 0	16 „
17	3,496 0 0	Not stated

To execute work under conditions of Unemployment Grants Committee.

No. of Tender.	Amount.	Time.	Percentage of workmen to be engaged who are unemployed.
1	£6,750 0 0	39 weeks	95 per cent.
2	*2,675 0 0	12 „	80 „
3	2,802 10 7	15 „	70 „
4	3,020 0 0	13 „	Not stated
5	10,267 0 0	13 „	100 per cent.
6	5,750 0 0	20 „	100 „
7	4,000 0 0	20 „	80 „
8	4,360 0 0	20 „	Efficient workmen
9	6,455 0 0	26 „	75 per cent.
10	4,500 0 0	20 „	Not stated
11	3,650 0 0	16 „	50 per cent.
12	4,475 0 0 / 5,370 0 0	20 „	50 „ / All „
13	Prime cost plus 12½ per cent.		
14	4,830 0 0	30 weeks	60 per cent.
15	3,294 0 0	14 „	80 „
16	2,898 0 0	18 „	75 „
17	5,240 0 0	Not stated	Not stated

The tender accepted is that submitted by Edward's Construction Co., Ltd., of Eltham.

(2) CHASE FARM SCHOOLS.

To execute work by ordinary control.

No. of Tender.	Amount.	Time.
1	3,620 0 0	20 weeks
2	2,988 0 0	10 „
3	2,896 0 0	20 „
4	4,634 0 0	16 „
5	3,377 0 0	16 „
6	3,350 0 0	—
7	3,453 0 0	26 weeks
8	3,313 0 0	16 „
9	1,923 4 0	—
10	3,380 0 0	—
11	3,888 0 0	12 weeks
12	2,217 0 0	10 „
13	2,615 0 0	14 „
14	2,665 0 0	18 „
15	4,400 0 0	15 „
16	2,098 17 6	10 „
17	2,897 15 0	13 „
18	2,347 5 0	13 „
19	1,785 17 6	12 „

To execute work under conditions of Unemployment Grants Committee.

No. of Tender.	Amount	Time.
1	3,980 0 0	20 weeks
2	3,900 0 0	—
3	3,040 0 0	20 weeks
4	5,084 0 0	20 „
5	4,300 0 0	20 „
6	Prime cost plus 12½ per cent.	
7	4,834 0 0	30 weeks
8	4,141 0 0 / 4,969 0 0	20 „ / 20 „
9	2,073 4 0	—
10	5,056 0 0	—
11	—	—
12	2,317 0 0	12 weeks
13	2,745 15 0	14 „
14	2,778 0 0	20 „
15	5,500 0 0	19 „
16	*2,098 17 6	10 „
17	2,897 15 0	13 „
18	2,959 5 0	13 „
19	1,915 10 6	15 „

The tender accepted is that submitted by Edwards Construction Co., Ltd., of Eltham.

DUNDEE.—For the erection of an additional school building on the site of the St. Joseph's Secondary School, Lawside, for the Education Authority. Mr. John E. Williams, Executive Officer, Education Offices, Dundee :—

Brickwork and drainage—	
J. Nicoll & Son, Dundee	£282 6 7
Joiner work—	
G. N. Sturrock, Dundee	1,482 0 0
Plumber work—	
J. Farquharson & Son, Dundee	186 3 7
Electrical work—	
W. Cargill & Co., Dundee	58 10 0
Painter work—	
D. Morrison, Dundee	150 0 0
Heating stoves—	
G. Stephen & Son, Dundee	43 15 0
Concrete work—	
J. Carnegie & Son, Dundee	52 17 6
Window blinds—	
W. W. Small, Lochee	25 12 0

GOLDTHORPE.—For erection of a warehouse. Mr. P. A. Hinchcliffe, F.R.I.B.A., architect, Barnsley :—

*B. Groves, Goldthorpe	£589 7 10

GOSFORTH.—For structural work required in connection with the installation of a pulverising plant for house refuse, together with deposit shed and approach road, for the U.D.C. Mr. Geo. Nelson, Surveyor, Gosforth :—

*Robert Fisher, North Shields	£1 764 15 2
Sir Johnstone Arrol, Glasgow	1 785 18 5
G. H. Mauchlen, Newcastle	1,795 0 0
W. C. Fleck, Gosforth	1,843 3 2
A. J. W. Potts, South Gosforth	2,011 4 3
John Jackson & Sons, Newcastle	2,047 6 6
Stephen Bury, Newcastle	2,076 4 9
Bladen & Co., Ltd., Glasgow	2,221 1 2
Gunning & Co., Newcastle	2,283 8 3

GOSFORTH.—For the erection of a building to contain a steam disinfector in the Council's Smallpox Hospital grounds, South Gosforth. Mr. G. Nelson, Surveyor, Gosforth.

*Wm. C. Fleck, Gosforth	£392 10 8
W. Jackson, Newcastle	433 16 2
J. Craven, Newcastle	448 18 1
W. Spetch, Newcastle	467 13 9
Middlemass, Newcastle	613 0 0

LIVERPOOL.—Painting and repairs at Municipal Offices, for the T.C. :—

*A. R. Jones, Liverpool	£629

LIVERPOOL.—Rebuilding boundary wall at Rathbone-road Recreation Ground, for the T.C. :—

*W. R. Tinniswood, Liverpool	£160

LIVERPOOL.—Cleaning, painting, &c., at Port Sanitary Hospital, for the T.C. :—

*W. Bell & Co., Liverpool	£347 17 0

LONDON.—Supply and erection of mild steel chequer plate floor and platform at generating station, for the Hammersmith B.C. :—

*Sanders & Forster, Barking	£895 0 0
J. Westwood, Ltd.,	1,057 17 6
A. D. Dawnay & Sons	1,145 0 0
Measures Bros.	1,164 15 7
Aston Construction Co.	1,335 0 0
Lilleshall Co.	1,352 0 0

LONDON.—For supplying and fixing a steel frame wood and iron structure on land adjoining the Town Hall for office accommodation for the staff of the Hammersmith B.C. :—

	With corrugated iron to ventilator.	With "Chalgate" glazing to ventilator.
*W. J. Cearn, E. Ld.	£1,880 0	*£1,906 0
W. G. Tarrant, Ltd., Byfleet	1,990 0	2,135 0
J. McManus, Ltd., Hammersmith	1,995 0	2,014 0
A. & F. J. Weather, S.W.1	1,997 0	2,028 0
F. W. Palmer & Co. Merton	2,000 0	2,041 0
J. Allan, Snr., & Sons, E.C.3	2,009 0	2,040 0
G. Ellis & Co., S.E.1	2,015 15	2,026 10
David Rowell & Co., S.W.1	2,064 0	2,095 10
J. Harrison & Co., Camberwell	2,073 0	2,108 0
Boulton & Paul, Ltd., E.C.	2,150 0	2,180 0
Humphreys, Ltd. S.W.7	2,161 0	2,185 0
A. Dawnay & Co., Battersea	2,190 0	2,205 0
M. T. Shaw & Co., Kensington	2,336 0	2,371 0
Higham Engineering Co., W.C.1	2,370 15	2,400 15
Ovenden Sheet Metal Co., Halifax	2,420 15	2,480 5
Seymour Construction Co., Barking	2,537 0	2,563 0
Williams & Williams, Chester	2,742 4	2,767 14
Blakelock Building and Decorating Co., S.W.5	2,939 17	2,963 17

LLANGRANOG.—For painting and colouring of Bancyfelin Methodist Chapel. Mr. R. Jones, architect, Llandyssul.

*Davis Bros., Newcastle-Emlyn	£130

MAIDSTONE.—For 12½ ton steam roller, for the T.C. :—

*Aveling & Porter	£1,198 16

MINEHEAD.—For completion of promenade improvement scheme, for the U.D.C. Mr. A. D. Barron, Engineer, Council Offices, Minehead. Quantities by Engineer :—

*Fothergill Bros., Exeter	£5,393 5 1

NEWCASTLE-ON-TYNE.—Painting at (*a*) Cattle Market (*b*) at Vegetable Market, for the T.C. :—

*(*a*) M. Alexander & Sons	£400 11 8
*(*b*) Adam Robertson & Son	398 0 0

NORTHAMPTON.—For painting of schools, for the T.C. :—

*A. F. Godwin, St. James'-road Council School	£235
*Adkins & Co., Stimpson-avenue Council School	595
*A. L. & H. W. Chown, Military-road Council School	575
*A. L. & H. W. Chown, Campbell-square Council School	625

NORTHAMPTON.—For alterations at Intermediate Schools, for the T.C. :—

*Throssell & Co., Barry-road School	£300 0
*S. Walker, Kettering-road School	128 10
*King & Fox, Campbell-square School	139 5
*H. G. Allum, St. George's School	308 12

NORTHAMPTON.—For science room fittings at Intermediate School, for the T.C. :—

*E. Green & Sons, Barry-road School	£304 0
*E. Green & Sons, Kettering-road School	270 0
*Bennet Furnishing Co., Campbell-square School	224 13
*E. Green & Sons, St. George's School	294 0

NOTTINGHAM.—For alterations and additions to (*a*) the Northern Baths, and (*b*) the Radford Baths, for the T.C. :—

*(*a*) Thomas Barlow & Co.	£750
*(*b*) Thos. Long & Sons	6,199

SALFORD.—For (*a*) copper hot-water installation and (*b*) heating and ventilation at Nab Top Sanatorium, Marple, for the T.C. :—

*(*a*) W. Matthews & Sons	£693
*(*b*) W. Matthews & Sons	684

SALFORD.—Supply and fixing of ironmongery at Nab Top Sanatorium, for the T.C. :—

*James Gibbons, Ltd., Wolverhampton	£456

SALFORD.—Supply of materials to the Tramways Dept., for the T.C. :—

*Buxton Lime Firms Co., Ltd., Buxton, *limestone cubes*	£228 2 6
*J. E. C. Lord (Manchester), Ltd., Salford, *pitch and creosote*, sliding scale.	—
Lancashire Chemical & Mineral Co., Manchester, *traffic sand*	273 8 9
Abel Lighterage and Ballast Co., Liverpool, *traffic sand*	203 2 6

SALFORD.—Accepted by the T.C. :—

*Summerfield & Lang, Ltd., Liverpool, 250 *tons broken granite* (2½ in.)	£260
100 *tons granite chippings* (½ in.)	104
*Henry Heys & Co., Ltd., Stackheads, 100 *tons stone chippings* (½ in.)	92
*C. H. Phillips, Beswick, 50 *tons cubical limestone chippings*	45
*The John Crankshaw Co., Ltd., Horwich, *earthenware pipes*	700
*George Phillipson, Bromley Cross, *curbs*	792
*James Stoddart & Son, Manchester, 2,500 *gallons paraffin oil*	136
*East Anglian Cement Co., Ltd., *Portland cement*	1,215
*Joseph Kershaw, Bury, *cast iron materials, at 15s. per cwt.*	130

SALFORD.—Electric installation at Wellington-street Girls' School, for the T.C. :—
*Robt. Over, Salford £112

SALFORD.—Supply of 250 yards of 3 in. stoneware pipes; and 500 yards of 3½ in. stoneware pipes, for the Electricity Dept. of the T.C. :—
*Doulton & Co. £210 15 7½

WALLASEY.—Construction of pit in connection with coke handling plant at Gas Works, for the T.C. :—
*Woodall Duckham Vertical Retort and Oven Construction Co. £450

WALLASEY.—Supply of cast-iron compressors with steel tie-rods and plates for attachment to the New Brighton Landing Stage Moorings, for the T.C. :—
*John Varley, Ltd., St. Helens £554 18

WINDSOR.—For painting and other work at the Police and Fire Stations, for the T.C. The Borough Surveyor, 16, Alma-road, Windsor :—

*F. Greening, Windsor.....	£432	15	0
G. Cave & Son, Windsor.....	421	7	6
H. Meckonik, London.....	594	10	0

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WALTHAMSTOW.—For alterations and additions to the public slipper baths, High-street, for the U.D.C. Mr. J. Williams Dunford, architect, 8, Cleveland Park-avenue, Walthamstow, E.17. Quantities by Mr. E. C. Harris, 39, Bloomsbury-square, W.C.1 :—

Guild of Builders, Bloomsbury.....	£12,983
Graham, Denney & Co., London....	13,078
Douglas, Halse & Co., Woolwich....	13,605
H. C. Horswill, Forest Gate.....	13,900
J. & J. Dean, Walthamstow.....	14,381
Albert Monk, Edmonton	14,460
Wm. Moss & Sons, Loughborough..	14,490
J. Jarvis & Sons, Hackney.....	14,522
Peachey Bros., Walthamstow.....	14,631
W. Shurmur & Sons, Clapton.....	14,724
Walter Jones & Sons, Westminster..	14,726
Winter & Ward, Harpenden.....	14,763
Killby & Gayford, London.....	14,788
Edwin Jackson, Stepney.....	14,792
Thomas Shillitoe, London.....	14,840
R. Woollaston & Co., Limehouse....	14,880
Marrable Bros., Leytonstone.....	14,997
Samuel Blow, Smithfield.....	15,000
E. J. Logan, London.....	15,155
Walter Lawrence & Son, London..	15,292
Herbert E. Jerram, East Ham.....	15,400
George Barker, Whitechapel.....	15,437
C. Miskin & Sons, St. Albans.....	15,456
H. F. Ball, London.....	15,520
W. Watkin & Son, London.....	15,641
D. G. Somerville & Co., Westminster	15,700
Rowley Bros., Wood Green.....	15,851
W. Silk & Son, Homerton.....	15,890
Henry Knight & Son, Tottenham..	15,928
Brand, Pettit & Co., Tottenham....	15,932
John Sands, Walthamstow.....	15,976
Pitcher Construction Co., Holloway	16,054
Fredk. John Coxhead, Leytonstone..	16,125
Geo. Munday & Sons, London.....	16,152
W. J. Maddison, London.....	16,560

The Industrial League and Council.

A series of lectures is to be held by the Industrial League and Council at Caxton Hall, S.W. 1. The lectures are to be followed by debates, in which members of the audience are invited to participate. On October 12, Sir Harry Brittain, K.B.E., M.P., is to preside over a meeting at which Mr. Chas. Jesson, M.P., will lecture on "The Importance to the Worker of Initiative and Enterprise." Other lectures to be given are: October 19, Mr. E. W. Petter on "Economic Axioms of Industry"; October 26, Mr. E. W. Mundy, B.A., on "Profit Sharing and the Coal Settlement"; November 2, Mr. E. C. de Segundo, A.M.Inst.C.E., on "Ability as a Factor in the Production of Wealth"; November 9, Mr. E. J. Garmeson on "Industry and its Relation to Finance"; November 16, Mr. F. S. Button on "The Great Essential in Industry"; November 23, Mr. H. E. Blain, C.B.E., on "The Industrial Revolution in England"; November 30, Mr. H. H. Elvin on "Some Causes of Industrial Unrest, and a Remedy"; December 7, Mr. John Baker on "Some Problems of Unemployment"; December 14, Mr. H. G. Williams, M.Sc., A.M.Inst.C.E., on "The Cost of Living and its Implications"; and December 21, Mr. A. Dalgleish on "Trade Boards."

The Building Guilds.

At a meeting convened in Birmingham last week by Co-operative Builders, Ltd. (a concern formed on the lines of the building guilds), Mr. B. W. Hampton, who presided, said the guilds were doing their utmost to oppose trade combinations and "rings," and at the present time were importing supplies of timber at a cost 15 per cent. less than that ruling for similar quality timber in this country.

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